

**West Bengal Police Directorate  
Bhabani Bhawan, Kolkata-700027.**

**e-Tender Notice No. WBPD/ DMG (Misc) /NIT-01/2024-25**

The Director General & Inspector General of Police, West Bengal, having his office at West Bengal Police Directorate, Bhabani Bhawan, 2<sup>nd</sup> Floor, Alipore, Kolkata-700027, on behalf of Governor of West Bengal, **invites e-tender for Supply of various items of DMG of West Bengal Police** in the financial year 2024-25 as per details in the Tender document, hereinafter called Notice Inviting e-Tender (NIT). Rates should be quoted in the standardized BOQ format. NIT Details may be seen & downloaded from the website <https://wbtenders.gov.in> and in the website of West Bengal Police, [www.wbpolice.gov.in](http://www.wbpolice.gov.in). For any query, one may contact Procurement Cell, West Bengal Police Directorate, Bhabani Bhawan, 31, Belvedere Road, Kolkata-700027, during office hour on any working day (Ph. No. 033-2479-4035/36/56/57, Extn. 2222). If any rectification is required, corrigendum/addendum will be published in websites [www.wbpolice.gov.in](http://www.wbpolice.gov.in) & <https://wbtenders.gov.in>.

Relevant documents may be downloaded on line from 16.01.2025 (Thursday) after 17:00 hrs Bid submission closing date (online) i.e. the last date of submission of the bid is 21 days from the publication of the Tender Notice in the Newspaper.

Pre-bid meeting on 20.01.2025 (Monday) at 12:30 hrs at Procurement Cell, Ground floor, Alipore, Kolkata-27.



**Inspector General of Police  
(Organisation)  
West Bengal, Bhabani Bhawan,  
Alipore, Kolkata- 700027.**

**SECTION-A**

**QUALITATIVE REQUIREMENTS (ORs) / SPECIFICATION OF EQUIPMENTS FOR DMG OF WEST BENGAL POLICE-**

<b>(I) CSSR EQUIPMENT</b>			
<b>1</b>	<b><u>BULLET CHAIN SAW (FUEL)</u></b>		
	Carbide Tipped chain saw are petrol engine driven saws designed to cut through different building material like timber, FRP,PVC etc.(but not concrete) these are extremely useful for first responder for inspection, ventilation and obtaining access to victim during CSSR and for other tasks relating to extrication and recovery during natural and manmade disasters.		
1	Engine		Two stroke, single cylinder, air cooled petrol engine
2	Displacement within 72 cc generating power		Between 4.8 Hp to 6.5 Hp
3	Engine speed		Between 10000 to 14000 RPM at no load
4	Chain speed		Between 25 to 30 m/s
5	Ignition system		Electronic with easy preferably one button start up (to be specified).
6	Guard bar length		20Inch / 25 Inch- one-piece construction
7	Cutting Chain		Carbide tipped with loc king key and solid bullet rake gauge of size 1.6 pitch 3/8 Gauge with heavy duty tie straps and tempered rivets. Fully automatic and adjustable chain lubrication system. Automatic chain break system for quick stoppage when required. Arrangement for adjusting chain tension should be available.
8	Provision for setting		Should have provision for setting and adjusting depth of cut.
9	Operator Safety and comfort		Full wrap handle and arrangement for reducing vibration to be specified.
10	Weight		Within6-8 kg
11	Noise level		Less than 110 dB @ 1 meter
12	Depth of cut		18 – 22 Inch.
13	Fuel tank capacity		0.70 to 1 liter
<b>2</b>	<b><u>DIAMOND CHAIN SAW</u></b>		
	<b>GENERAL :-</b> Diamond chain saw suitable for cutting reinforced concrete at least 300 mm thickness and with built in reinforcement up to 12 mm dia. Masonry bricks natural stone or other similar Material.		
1	Engine – 2 stroke petrol driven air-cooled power shall be not less than 6 H.P.		
2	The starter shall be shielded from the dust & water. It shall have electronic ignition protected from water and single spring clutch proofed from water and concrete.		
3	Fuel capacity :800ml – 100ml (Approx.)		
4	The noise level should not exceed 105 dB at 01 mtr.		
5	It shall be fitted with diamond chain, which runs over the guide bar. The chain saw shall be capable of cutting RCC up to 360 mm thick.		
6	The water supply required by the chain while cutting.		
7	The chain saw shall also be provided with measures/Attachment for reducing the force required during cutting operation in order to reduce fatigue on operator.		
8	It shall also be provided with foam covered full wrap handles, momentary contract on off switch, water pressure gauge, 360 degree swivel hose connector, sprocket side cover and guard flap for operator safety.		
9	Weight : Not more than 8 kg.		

10	Cutting rate :- 10 to 25" per min or more.
	<b>TECHNICAL EVALUATION/INSPECTION</b> :- The technical para meter specified above shall be checked at the time of inspection. The supplier at his cost shall provide all tools/Eqpt/materials and facility required for testing inspection.
	<b>ACCESSORIES:-</b> A spare diamond chain.
<b>3</b>	<b><u>ROTARY RESCUE SAW</u></b>
1	Minimum 60 CC, 2 stroke petrol driven engine.
2	Air cooled engine.
3	Minimum Output Power up to 4 HP at 9000 Motor RPM.
4	With Adjustable blade guard.
5	RPM above 5000
6	Provision of wet cutting of materials by providing connection with water line.
7	<b>Accelerator lock is preferable for continuous use and safety inter lock must be provided.</b>
8	It should be capable of running 14" Dia blade.
9	Minimum cutting depth = 1- 5 Inch
10	Fuel tank capacity =0.8 ltr to 1.0 ltr.
11	Should be capable of cold manual pull cord start.
12	Noise level should be less than 120 db in one Mtr. around the equipment.
13	Ignition=Electronic type.
14	Should be provided with choke arrangement.
15	Machine holding handle should be rubber coated/robust cutting providing cushion for getting good grip.
16	<b>Weight not more than 12 kg. with blade and full tank fuel.</b>
17	With rugged protective carry case.
18	Rust Proof
19	International certificate on product quality.
20	<b>ACCESSORIES.</b>
a	Diamond Tipped blades (Spare) carbide type blade and abrasive blade.
b	5 liter fuel container.
c	Spare air filter.
d	Pressure water tank with capacity of minimum 8 ltr along with 5 mtr rubber pipe.
e	Complete tool kit.
21	<b>TECHNICAL EVALUATION :-</b> Shall be subject to the following :-
a	Meeting the requirement as mentioned from srl No. 01 to 20 above.
b	Design in conformity to EN/DIN/US or equivalent standards and certificate to be submitted along with the bid.
c	The bidder shall have to demonstrate the performance of their product by cutting the following: - A piece measuring 400 mm X 400mm x100mm made of reinforced cement concrete slab (ration 1:2:3) with four steel bars of 12 mm diameter placed equidistant and the time shall be recorded for cutting for the sample in following way. While cutting, slab shall be erected in standing position and time taken to cut only 100 mm thickness shall be noted for each machine across the thickness of the slab. Numbers of steel bars encountered shall be same for all machines.
d	-A piece of iron rod of dia2"(Quality of iron shall be the same which is utilized in iron bars used for buildings and constructions). -A piece of bullet proof glass of thickness 12mm minimum.

	-A Piece of stone slab of dimension of 14" X 12" X 4" thickness of slab shall be 4" and the same shall be cut across it cut thickness completely.		
22	<b>DIMOND TIPPED BLADE</b>		
1	Diamond Blade		
2	Blade RPM – above 4000-5500		
3	Diameter 14 Inch.		
4	Minimum cutting of depth of 100 mm.		
5	Type of blade- Multipurpose (For cutting concrete, metal bullet proof glass, wood).		
6	Internationally certified on quality standards.		
23	<b>SPARE ACCESSORIES</b>		
1	One Diamond blade,		
2	One abrasive blade		
3	One 13Ltr Water Dram		
4	One Sparking plug		
<b>4</b>	<b><u>BATTERY OPERATING CHAIN SAW</u></b>		
	Battery operated Chain saw machine for cutting Uprooted trees Cutting Length not less than 35 Cm. Rated Volt 36 Volt Lithium Ion Battery, weight not more than 3.3 Kgs,(Without battery but with guide bar and Chain) Battery life Min 45 Minute with one charge Machine to be supplied with two Batteries and one quick Charger& One Chain.		
<b>5</b>	<b><u>5.5 KVA GENERATOR SET</u></b>		
	<b>NOMENCLATURE</b>		<b>PARAMETER</b>
1	Rating		5.5 KVA
2	Phase		Single
3	Frequency		50 Hz (±2)
4	Voltage (AC)		230 V (±5 %)
5	Voltage (DC)		12 V for Battery charging
6	Engine		4 Stroke, Single cylinder Engine Power : 5.3 kw at 3000 RPM.
7	Displacement		380-450 cc
8	Starting System		Electric (12V) / Recoil
9	Dimension (L x W x H)		Maximum 1270 x 700 x 750 mm (+ 10%)
10	Cooling		Air Cooled
11	Weight		Between 120 – 140 Kg.
12	Fuel		Diesel / Petrol
13	Fuel Tank Capacity		18 – 20 Ltrs
14	Wheels and Handles		Yes
15	Low Oil pressure Alert		Yes
16	PF		0.8pf
17	Control Panel		Volt, Hour, Ampere, DC Charging
18	Safeties		Low Lube Oil Protection, Overheat Cutout, Overload
19	Engine Should be certified by ARAI		
20	Generator should comply with latest CPCB Norms		
<b>6</b>	<b><u>INFLATABLE LIGHTING TOWER</u></b>		

	This shall be capable to provide instant light as a first responder in shortest possible time to illuminate wide area of approx. 10,000 sq. meters. It shall be light in weight, foldable and portable to be carried in light motor vehicle. It shall be easy to operate by an individual and safe as well as reliable. It shall be supplied with matching generator. It shall not take more than 60 sec to inflate and 03 minutes to achieve its best operating level.		
1	Dimension (folded)		Not more than 580 x 440 x 520mm
2	Weight (including generator)		Not more than 50 kg.
3	Total Height		3 to 5 meters (After Inflation)
4	Light Sources		400W metal halide or any suitable source to illuminate 10,000 Sqr. meter areas.
5	Brightness		Not less than 4000 Lumen.
6	Time for Max light efficiency		Not more than 3 Min
7	Generator		4 stroke engine (petrol). Capacity-1200 VA (rated) Fuel consumption-Not more than 1liter/hr Tank capacity- Not less Than7 liters.
8	Storage box suitably designed to accommodate the tower and other spares and easy handling. Proper locking arrangement.		
9	Rain protection cover for generating set and control gear box made of water proof cloth with air vent arrangement.		
10	General cover made of water proof cloth to ensure safe storage outside.		
11	Wind support suitable stay wire ropes (preferably 3 Nos) which can be tied to tower (balloon) and grouting hooks in case of extra wind velocity).		
12	Tool kit necessary tool required for operation of emergency lighting system.		
13	Trolley wooden/suitable material trolley with wheels to move the erect tower within a reasonable distance		
<b>7</b>	<b><u>CHIPPING HAMMER</u></b>		
1	With adjustable bits		
2	Chiseling impact rate: – More than 800bpm.		
3	Single impact force :- 45J or more		
4	Power input:- 1500 w – 2000 w		
5	Weight:- 25 to 30 Kgs		
6	Light in weight, Shock proof body with required accessories, lubricant & electric cord of equipment not less than 4 mtr in length with 10/15 Amp 3 pin convertible in to 2 pin plug.		
7	Equipment must have dust seal to protect from entering of dust inside the machine.		
8	Adjustable auxiliary handle.		
9	Equipment Should be certified from national BSA/international (EPTO) agencies.		
10	Easy to operate on/off slide switch, mode selector switches etc.		
11	Equipment must have active vibration absorbing system (AVAS). And should fulfill adequate safety norms as per international standard.		
12	Equipment must be supplied with two (one flat & one pointed tipped) spare bits. Including standard Greece, spare Ear plugs, dust cap.		

13	Protective/Carrying/Housing case should be made up of hard durable plastic material. And should be designed that it fully protects the eqpt from getting damaged and for easy handling of eqpt during transit.
14	Noise level: - not more than 120 Db.
<b>8</b>	<b><u>COME ALONG 1.5 TONS</u></b>
	<p>Come Along system should be of steel or hard Aluminum Alloy consisting three major parts i.e. Base, Mast &amp; Boom. The system should provide a safe secure anchorage for confined space entry, exit and rescue work. The system should be completely collapsible and portable for advantage of easy transportation. The system should be completely collapsible and portable for advantage of easy transportation. The system should be corrosion resistant. All adjustment should be on key plugs easy to assemble and dismantle without any tools. The rated capacity in terms of working load should be more than 200 Kg. The complete system should have compliance of European standard or should have certification from NABL approved Lab for safety factor.</p> <p>Tendered should supply ascending descending device/winch, accessory handle, rope, rescue stretcher and Full body Harness along with system. Ascending descending device/winch should work on principle of wrap or contract friction. Ascension handle should be made up of light forged aluminium Alloy. The handle grip should be comfortable with thermal insulation. Rope should be made of polyamide. The breaking load of rope should be more than-24 KN (without end connection) and more than-18 KN (with end connection). The rope diameter should be 9 mm to 12 mm only. Rescue stretcher should be made up of Fiber/LightweightAluminium Alloy. It should be in bucket shape with sufficient number of straps to hold casualty. It can be lifted vertically up &amp; down. Full body Harness should be complied with EN 361/ 358.</p>
<b>9</b>	<b><u>ROPE KERNMANTLE INDIA</u></b>
	<b>SCOPE</b> :- The specification covers to the requirement of climbing rope nylon glacier region. The rope is intended top be used as an aid in climbing difficult cliffs/slopes in glacier region.
	Related specification &availability : the following will be related specifications.
	(a) IS -678 Method for determination of colour fastness of textile materials to washing test no 1
	(b) IS - 2454 Method for determination of colour fastness of textile materials to artificial light.
	(c) IS- 6590 Braided nylon rope for mountain ring purpose.
	(d)IS - 397 - Kraft paper
	(e) IS - 1912 Country jute twine
	(f) IS - 3751 - Heavy cloth
	(g)IS - 2508- Low density polyethylene film
	(h)Indian standard specification are obtainable on payment from the secretary (ADM) BIS Manak Bhawan 9 Bahadur shah zafarmarg N/DLI or from their regional office.
	<b>SEALED SAMPLE</b> :- The climbing rope will confirm to every respect to the terms of this specification in workmanship finish and in all other respects not defined in this specifications it will confirm to the sealed sample held in custody of controlling authority.
	<b>MATERIAL</b> : The rope will be made from continuous 140 TEX (1260 d) high tenacity nylon 6 or 66 multifilament yarn and be given heat treatment. The required breaking strength of the rope may be achieved by use of nylon yarn having tenacity 63 g/tex (7g/d) count/denier of the yarn can be varied suiting to the construction and finish of the rope.
	<b>MANUFACTURE ,WORKMANSHIP AND FINSIH:-</b>

	(a) The rope will be manufacture with braided sheath and twisted core. The core and the braiding will be well formed and free from knots, subs or strains. All constituent yarn of rope shall have proper tension during manufacture so as to obtain uniform diameter with round cross section and appropriate flexibility. Core will not be in braided construction.
	(b) There will be 12 undyed core ends and 24 spindles in sheath. Out of 24 spindles, 12 spindles will be fast bright yellow colour, 11 spindles of fast bright scarlet colour and one spindle of fast bright blue colour, Inter plating in sheath will be maintained in order of 1 yellow spindle alternatively. Like wise 23 spindles will be main tend and 24th spindle will be blue colour to obtain the required pattern of braiding. Rope will be smooth in fell and free from slackness of sheath and core looping tendency.
	(c) The rope will be tendered in 49m of continuous length. A length of 4m from either end shall be cut and tested for characteristics given in clause 6 and 7 below. After examination of ropes which are strictly confirming to the required particulars shall be heat sealed.
	d) In appearance, general workmanship, Finish and in any other respects not defined in this specification, The rope will match with the respective sealed sample held in the custody of controlling authority.
	<b>Construction particular :-</b>
	Sheath-Noof spindles-24 (Yellow-12),Scarlet-11Blue-1
	Core-No ofcoreends-12count(denier)-1260x2x10(twisted together)
	No of stands in each core end -2
	No of yarns in each stand -10 of core
	Turns /dm-15 (Min)
	The construction details ofthe rope will be variedto suit the manufacturing conditions provided the finish and requirement as given in clause 7 are successfully met.
<b>10</b>	<b><u>ROPE MANILA (100MTR. LONG)</u></b>
1	Rope Manila of size 20 to 25 mm and made from Hessian Fabric With 3 strands laid in s or z pattern.
<b>11</b>	<b><u>ROPE NYLON (100 MTR. LONG)</u></b>
	It should be made up of 3 strands, adequate abrasion resistance with following specification
	Size – 20-25mm
	Breaking Strength – Should be more than 5500 Lbs.
<b>12</b>	<b><u>EXTENSION CORD DIA 100 MTRS. LONG</u></b>
a)	<b>Type</b> :- With one 15 amp & two 5amp switch socked fixed on wheel of diameter 1 feet with handle
b)	<b>Handle</b> :- Insulated handle of 6” to provide manual grip
c)	<b>Cord</b> :- PVC wire 8mm, 25Mtr. Length with 2/3 pin plug, with wrapping arrangement on wheel.
<b>13</b>	<b><u>FACE SHIELD</u></b>

**MANIKMIN FACE SHIELD**  
 Rectangular Barrier device used by rescuer when giving mouth mouth/mouth –nose ventilation in patients.  
 Size 7"x12" outer synthetic layer and 5"x7" central rectangular sieve-like filter of nonabsorbent white plastic;  
 The outer layer has a central hole of 1.5" diameter in the area of contact with patient mouth/nose and rescuer mouth with intervening filter layer  
**Package:** Single use disposable in sterile packing  
 Confirming to IS 1179/1967

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**SAFETY GOGGLES**

a)	Colour		Grey / Blue
b)	Material		Light weight and safe to wear with impact resistant plastic.
c)	Provision		Adjustable according to the size of the head, loose enough to pass the sweat.

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**REFLECTIVE JACKET**

a)	Description		Florescent colour jacket with 50mm glass bead type reflecting tape in 2 vertical and 1 horizontal band in front and back same. Front opening and V neck design
b)	Background Fabric		100% polyester. 125 gsm made from bright glossy yarn, adhering to EN 471 standard. It shall have excellent colour Fastness and should be UV treated.
c)	Colour		Florescent reddish-orange/ florescent lime/yellow.
d)	Reflecting tapes		Glass bead type reflecting tape, EN 471 class 2 approved, 50mm wide, color of reflecting tape will be silver grey.
e)	Accessories		(i) <b>Binding:</b> - Binding will be black in colour. 100% polyester fabric will be used in binding with excellent colour fastening. (ii) <b>Velcro:</b> - Velcro shall be 25 mm wide and 50mm in length positioned vertically for perfect fastening. The Velcro will be black.
f)	Size		Length 28 inches and width 24 inches. If required another size that will be mentioned in supply order accordingly

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**HEAVY DUTY WORK GLOVES**

a)	Material		Made of fine leather, flexible.
b)	Application		Capable to work with hand held machine.
c)	Size		Medium, Large and Extra Large

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**TRAFFIC CONE**

The traffic cones should be made by suitable & durable plastic, the base of which should be heavy rectangle to provide standalone Stability with conical body of height not less than 2 ft. It should be painted with orange fluorescent paint with retro reflective strip of 1 to 2 inch width around the conical body at suitable height.



<b>18</b>	<b><u>SCENE TAPE ROLL 100 MTRS.</u></b>		
a)	Size		Length 100 meter, width 3"
b)	Material		PVC tape roll with red & white strips (Red colour preferably in fluorescent colour) with DANGER written in bold letters.
<b>19</b>	<b><u>EMERGENCY RESCUE STRETCHER. (SPINE BOARD)</u></b>		
a)	Dimensions		Length 1830mm
b)	Width		420 mm
c)	Weight		5 Kg
d)	Capacity		200 kg
e)	CT/MRI compatible and radio lucent		
f)	Material		Carbon fiber or fiber glass.
g)	Separate hand holds and restraint holds with smooth edges for easy and comfortable lifting		
<b>20</b>	<b><u>FIRE AXE</u></b>		
a)	Size		12" with 2.5 feet long rod
b)	Weight		5 kg
c)	Handle		Fully Insulated handle tested at 2500 volts BIS Specifications
d)	Axe heads shall be made of suitable grade of tool steel. (As per IS 3748).		
e)	The Weight of hand & felling axes shall be 1 Kg & 2 Kg respectively with tolerance of + 7.5 % & -2.5%(As per IS 703).		
f)	Harness		-550 to 650 HV at a point 13 mm from cutting edge (As per IS 703)
g)	Mechanical test		Axe head shall be fitted with handles & tested by striking 12 blows against a heavy block of hard timber.
<b>21</b>	<b><u>BOLT CUTTER 30"</u></b>		
a)	Size		Length 30"
b)	Cutting Jaws		made of high tensile solid alloy steel, specially heat treated with center cut head.
c)	Handle		With sufficient grip of rubber for a length of 6 to 8 inches.
d)	Application		Suitable for cutting hard material viz. bolt, iron rod of 10 to 14mm diameter.
<b>22</b>	<b><u>AXE</u></b>		
	GENERAL:- Designed for Emergency workers, fire fighters and in disasters and consists of Axe with fibre glass reinforced, thermoplastic handle, forged steel/tested for at least 22000		
	<b>TECHNICAL SPECIFICATION :-</b>		
a)	Weight		05 Kg to 07 Kg.

b)	CONSTRUCTIONS:		The axe head, pick, chisel and mattock are made of grade EN 8 steel or better than EN 8 steel. The shovel, rake cum hoe are made from steel and the blades should be hardened for long life. The hitch pins are of high-grade steel hardened and plated. The axe head is fixed with the handle and preferably bonded with the best epoxy resins. The composition of the handle is of protruded fibreglass insert moulded on the outside with PPCP and EPDM, giving tremendous elasticity and shock absorbent, to avoid blisters or sore palms even after having chopped quite some wood.
c)	Deign		The axe head is designed to chop wood effectively.
d)	Hardness		Of the blade ensures to cut or strike against rock or steel.
e)	Approval		Tested at 22000 volts at least.
f)	Handle		Round wooden 25 - 30 Inch.
<b>23</b>	<b><u>SLEDGE HAMMER 7 KG</u></b>		
a)	Weight		7 KG. (Seven Kilogram)
b)	Provision		Iron head.
c)	Handle		Wooden Handle
d)	Application		To break concrete & drive stacks BIS Specification.
e)	The hammer heads shall be made from fully killed forging quality steel.		
f)	The hammer heads shall be hardened & tempered on the striking faces & pains only		
g)	The striking face shall have harness between 46 to 58 HRC.		
h)	The hammer heads shall be cleanly forged in one piece.		
<b>24</b>	<b><u>KEROSENE OIL HEATER</u></b>		
	IND/GS/1691(a) Supersedes Drg. No. CIGS/HH/103(d)		
<b>25</b>	<b><u>THERMAL IMAGING CAMERA</u></b>		
	Thermal imaging camera should be capable of viewing object and persons in total darkness or smoke filled conditions such as during nights and fire/disaster conditions. It should also have integrated temperature measurement with digital display.		
(a)	<b>WARRANTY</b>		The vender should warrant the entire thermal image camera free from defects for a period of 24 months from date of delivery.
(b)	<b>SERVICE</b>		The bidder should have service facilities in India to provide for timely and efficient service related issues.
(c)	<b>QUALITY</b>		The camera must be manufactured by an ISO 9001 organization.
(d)	<b>WATER RESISTANCE &amp; ELECTOR MAGNETIC COMPATIBILITY :-</b> Documentation should be submitted illustrating tests that have been conducted to certify water resistance and electro-magnetic compatibility		

(e)	<b>PHYSICAL CONFIGURATION</b>		The thermal image camera should be a hand held design with battery, viewing optics , side straps, neck strap lanyard and the optional choice of grips. Weight of camera should not exceed 2 kgs. (The camera should be supplied in a storage case )
(f)	<b>TURN ON TIME</b>		The camera should provide an image within nominally five (5) seconds of power being applied.
(g)	<b>TECHNOLOGY</b>		The imaging technology should be amorphous silicon 320 x 240 or better micro bolometer free of export restrictions into India. The heat sensitivity of the detector should be the minimum of 0.05 degree Celsius for temperature definition. The imager should exhibit an ability to avoid without or blooming conditions when subjected direct to flame or sun. Clarity of the image must not deteriorate by either type of exposure during normal operation. The imager should have Minimum three colour to aid clear identification of the burning matter. The unit should have a Direct Temperature Measurement facility with a digital read-out. Temperature measurement to be from 0-500 (Minimum) Degree Centigrade.
(h)	<b>OUTER SHELL CASE</b>		The imaging unit should be ergonomically designed with heat resistant material of construction. The unit colour should be yellow or bright colourThe unit should be capable of withstanding a 1.5 meter drop.
(i)	<b>VIEW OPTICS</b>		By high resolution not less than 90 mm (3. inch) colour Liquid Crystal Display LCD.
(j)	<b>LENS</b>		The unit should have a lens fabricated of germanium with a diagonal field of view of not less than 50 degree. The lens focus range should be 1.0m to infinity.
(k)	<b>VISUAL INDICATORS</b>		All thermal imaging unit shall be equipped with the following on screen displays: Battery level indicator Digital temperature read out. All indicators shall be visible on the viewing screen.
(m)	<b>SWITCHES</b>		A single ON/OFF switch
(n)	<b>SIDE STRAPS/LANYARD</b>		The die straps and lanyard should be of sturdy fire retardant construction and be field replaceable. Side straps should be on both sides of the unit enabling it to be used by both left and right handed operators. The Lanyard should be attached to the unit by a "D" ring. An optional removable pistol grip handle or action grip should be available.

(o)	<b>POWER SUPPLY</b>		Each unit should be supplied with two rechargeable dry batteries each having a continuous operating time of 3 hours. Each unit should be supplied complete with a battery charger capable of operating on both mains 220/240 AC or 12V DC. The unit shall have automatic variable dynamic range control management.
(p)	<b>VIDEO OUTPUT</b>		The thermal image camera should have a video output or BNC connector.
(q)	<b>TRAINING</b>		Product familiarization should be available through the manufactures distributor. Each unit shall be shipped with a user manual. Authority letter from OEM should be attached with the bid.
(r)	<b>Instruction for bidder</b>		(a) The tenderer shall indicate the make/model in their offer. (b)The tenderer shall furnish the clause by clause compliance statement. In case there is any deviation the same should be clearly brought out in the offer. (c) They shall mention the relevant BIS/EN/DIN/UL certification of the product offered. (d)Technical manual comprising of servicing details shall be supplied with system. (e)Relevant Test certificate shall be provided from a Govt approved Laboratory or from the manufacturer along with their office.

<b>26</b>	<b>SATELLITE PHONE</b>		
1	Transmit frequency band		2670-2690 MHz
2	Receive Frequency band		2500-2520 MHz
3	Antenna polarization		LHCP (both transmit and receive)
4	Antenna gain		15.5 dB ( Min.)
5	EIRP of the terminal		18.5 dBW( Min.)
6	G/T of the terminal		Better than -8.4 dB/K
7	Transmit frequency accuracy (Including stability)		±2.7 Khz( Max)
8	Phase noise (SSB) of transmit Carrier		1 KHz Offset <- 70 dBc 10KHz& Beyond < - 80 dBc
9	Harmonics pf the transmit carrier		Lower than - 40 dB
10	Spurious and noise output in the transmit carrier		Ess than - 45 dB (discrete components other than signal spectrum in ±100 KHz band and less than -60 dB of the transmit carrier in any 4 KHz band outside selected ±100 KHz band
11	Channel Tuning		10 KHz
12	Modulation/Demodulation		BPSK

13	Modulation Parameter		
	Phase imbalance		< 3.0 deg
	Amplitude imbalance		< ±0.2 dB
	Error connection		Rate ½ with K=7, Convolution coding viterbi decoding
14	Phase Ambiguity Resolution		Differential Encoding/Decoding
15	Scrambling /Descrambling		CCITT v.35
16	Data Tx.rate		5,4 Kbps( Voice coding rate 4.8 Kbps)
17	BER		Better than $1 \times 10^6$ at Eb/No of 6.0 dB
18	Package		A suitable package with carrying case
19	Antenna alignment		By signal strength indicator & Magnetic compass
20	Weight of terminal		Less than 3.5 Kg.(with carry case & Charger < 4.0 Kg)
21	Power Supply		Battery operated with charging option of mains
22	Operating Temp		0 <sup>0C</sup> to + 55 <sup>0C</sup>
23	Humidity		95% at 40 <sup>0</sup> , non-condensing
24	Shock & Vibration		As per Transportation level

#### **OTHER REQUIRMENTS OF PORTABLE TERMINAL**

Mss Type –D portable terminal should support DAMA and PAMA selection. It should support signaling and communication protocol of ISRO HUB.  
 Battery Charging from main without removing from terminal.  
 Battery replacement should be possible from outside without opening main cover. Battery should sustain for at least 12 Hr. operational (Receive mode) and talk time should be greater than 3.0 Hr.  
 Compass should rugged enough to take care of transportation.  
 Terminal package design be highly reliable for disaster management application.

#### **27** ROPE LADDER

- (a) Light weight, High Strength,
- (b) Length – 40' to 50' (±5%)
- (c) Width – 30 CM (±5%)
- (d) Fine finish, All rungs strength min, 5 Kn (OEM Certified)
- (e) Rope Material – Polyester / Nylon, Alloy spreader Bar,
- (f) Certification, UIAA safety label / Certified .

#### **28** ROTARY HAMMER DRILL

Specification Of Rotary Hammer Drill ( Bis/Din/En/Is Or Equivalent )

Voltage - 220 - 250 V

Power input – 600 W - 800 W

Impact rate (ipm) – 0-4000 or more

Chisel adjustment - 36 position (min.)

With Mode Selector Switch for Drilling /

Chiselling or Both selection

Noise Level : <100 db.

- a) Voltage 220 – 250 V

b)	Power input		600w – 800W
c)	Impact rate (IPM)		0-4000 or more
d)	Chisel adjustment		36 position (min)
	With Mode Selector Switch for Drilling / Chiseling or Both selection .		
e)	Noise Level		<100db
	Drill must be Light weight, shock proof body electrical cord of not less than 5mtr. in length with 5 amp three/two pin plug. With compatible Drill Bit of 30 CM length -2 Nos. with suitable Protective carry case		
<b>29</b>	<b><u>HAMMER</u></b>		
(a)	Weight		04 Kg
(b)	Provision		Iron Head
(c)	Handle		Wooden handle
(d)	Application		To break concrete & drive stacks BIS Specification
(e)	The hammer heads shall be made from fully killed forging quality steel		
(f)	The hammer heads shall be hardened & tempered on the striking faces & pains only.		
(g)	The striking face shall have hardness between 46 to 58 HRC		
(h)	The hammer heads shall be cleanly forged in one piece.		
<b>30</b>	<b><u>TELESCOPIC POLE PRUNER :-</u></b>		
	i) Insulated shaft		
	ii) Single Cylinder		
	iii) 2 Stroke Engine		
	iv) Displacement – 25 - 26 cc		
	v) Power Output – 1.28 – 1.3 BHP		
	vi) Max. engine speed – 10,450 – 10,500rpm		
	vii) Cutting blade 12”		
	viii) Spare Chain -5 nos		
	ix) Weight not more than 7 kg		
	ix) Anti Vibration System – YES		
	x) Shoulder strap or full harness for greater safety and less fatigue		
	xi) Overall Length with Cutting Tool (Cmtrs) – 265-385		
<b>31</b>	<b><u>RECIPROCATING SAW</u></b>		
1	Rated power:-		Not less than 900 watt at 220 -240 volts
2	Stroke rate (at no load):		Not less than 2700/min.
3	Stroke length :		Not less than 28 mm
4	Cutting depth(wood)-		Above 165 mm
5	Cutting depth(steel sheet) –		More than 20 mm
6	With required accessories and electrical cord of minimum 5 mtr length with 5 amp three/two pin plug along with an extension cord of 10 Mtr.		
7	Rate current-		Not more than 6 amp
8	Noise level		< 100 db

9	Spare blades for metal & wood cutting 10 Nos with suitable protective carry case.		
10	Weight-		Not more than 5 Kg with blade.
11	The starting current drawn by the motor should be limited to prevent the electric supply fuse blowing.		
	This also prevents the tool starting with a jolt.		
12	Air cooled.		
13	Rust proof.		
14	Internationally certified on standards.		
	Saw must be capable of cutting a variety of materials like- all kind of wood and metal. Firm should give live demonstration in above regard on the samples provided by WBP DMG.		
<b>32</b>	<b><u>Ladder (Aluminium – Extendable – Telescopic)</u></b>		
<b>A</b>	<b><u>Rugged and Durable:</u></b>		
	The ladder should be made of rugged (having a rough irregular surface) and durable material (capable of withstanding wear and tear or corrosion). The ladder joints should make minimum noise during handling and carriage even after prolonged use.		
<b>B</b>	<b><u>Foldable:</u></b>		
	The ladder should be folded/ sliding and man-packed by back harness provided with the equipment.		
<b>C</b>	<b><u>Weight Capacity:</u></b>		
	The ladder even when extended to its maximum required height should be able to withstand the weight of two fully equipped troops climbing simultaneously (i.e. at least 200(two hundred) kg.		
<b>D</b>	<b><u>Vertical Weight Capacity</u></b>	-	-200 Kg
<b>E</b>	<b><u>Horizontal Weight Capacity</u></b>	-	- 100 Kg
<b>F</b>	<b><u>Non Reflective Finish:</u></b>		
	The ladder should be with non-reflective finish. Colour of the ladder to be specified by this office when issued supply order.		
<b>G</b>	<b><u>Grip:</u></b>		
	The rungs of the ladder should be designed to ensure better grip. The rung should be securely locked with the stile and not loosened with use. All sections should be suitably serrated to provide better grip to hand and foot. The ladder should be equipped with adjustable shoes with buffer coating at top and bottom ends to provide a firm grip, prevent slipping and making of noise.		
<b>H</b>	<b><u>Mechanism for Extension:-</u></b>		
	Suitable mechanism for easy extension and locking between all sections to be provided. The ladder at its joints can be removed for Multi action use as per operations. The ladder should not have any spring action for stabilization.		
<b>I</b>	<b><u>Hook in Device:-</u></b>		
	The ladder to be provided with hook in device at the top end to provided support during ops. Further, the ladder should have a wall spacer for the gap in between the wall and the ladder for easy of climbing.		

J	<b>Max Weight :-</b>	-	<15(Fifteen) Kg (with all accessories of single ladder).
K	<b>Distance /Gap between two successive steps of ladder:-</b>		
	Maximum 1(one) foot and Minimum $\frac{3}{4}$ (three/four) foot.		
L	<b>Joining Ladders: -</b>		
	The Mechanism of Ladders should be such that 2(two) single length ladders of 3.2(three point two) meter can be joined together to obtain a minimum height of 5.5(five point five) meter with rubber base section at the bottom. This ladder should be able to withstand the weight of one fully equipped soldier (i.e. at least 100(one hundred) kg).		
M	<b>Dimensions:-</b>		
i)	Length		Maximum 1.2 (one point two) meter.
ii)	Retraced form		Minimum 3.0 (three point zero) meter
iii)	Width		Minimum 0.35(zero point thirty five) meter (external)
iv)	Hook Length		Minimum 0.40(zero point forty) meter.
v)	Hook Width		0.35(zero point thirty five) meter (external).
vi)	Spacer		Wall Spacer should be T shaped with length of 0.17(zero point seventeen) meter (minimum).
<b>33</b>	<b>DRAGON LIGHT</b>		
	Light weight Rechargeable High Power LED Torch, 2 light modes, 10 Watt LED lamp with AC Charger, Run time Min. 04/08 Hrs. Spot Focus 1 Km. battery 6 Volt 4 Amp.		
<b>34</b>	<b>LOUDHAILER / MEGA PHONE</b>		
	<b>SPECIFICATION OF LOUDHAILER / MEGA PHONE</b>		
a)	Power output		16 watt rated, 20 watt maximum
b)	Voice range		0.40 km (1 km in quiet area)
c)	Power source		12 volts DC, 8 x UM-2 CELLS
d)	Microphone		Unidirectional, with volume control & press to talk switch
e)	Dimension		Horn diameter 220 mm, length 370 mm
f)	Weight		2 kg (approximate)
g)	Operation		Dry cell & car battery operation
h)	Body		Sturdy & light weight with inbuilt siren
	<b>BIS Specification</b>		
a)	The megaphone shall be able to withstand the following climatic severities: Dry heat : + 70C Cold heat : - 10C Damp heat: 2 cycles		
b)	Weight		Not more than 2 kg
c)	Harmonic distortion		Should be less than 10% at 1000 Hz
d)	Frequency Response		Overall frequency response shall be within plus minus 3 dib from 300 to 3000 Hz.
<b>35</b>	<b>FRP INDUSTRIAL HELMET</b>		
	<b>SPECIFICATION OF FRP INDUSTRIAL HELMET.</b>		
1	ISI MARKED		IS : 2925 OF 1984
2	SHELL MATERIAL		High density polyethylene (Hdpe)
3	Adjustable And Detachable Head Band With Nape		



4	STRAP MATERIAL		Low density polyethylene (LDPE)
5	ADJUSTABLE CHIN STRAP		Nylon chinstrap and Richet type head band
6	SLOT FIX DESIGN		Provision for easy clip on accessories like face shields and ear muffs
7	COLOUR		Yellow / White
<b>36</b> <u>Dust Mask:-</u>			
a)	Size:		4"
b)	Provision:		Having two elastic straps to fasten above & below the ear to prevent the dust.
c)	Material:		The cloth used for fabricating dust mask should be able to prevent entry of dust.
<b>37</b> <u>Full Body Harness:-</u>			
	It should be useful for safe working on Heights & protection against fall. The shoulder and thigh straps should be easily identified by two different colours. It should be fabricated for high shock absorbing and impact dispersing capacity while working-before, during and after a fall. It should have a specially designed seat strap for optimum comfort. It should have Energy Absorbing Dorsal ID.		
	<b>SPECIFICATION</b>		Its Anchor point should be by means of 2 chest attachment triangular-ring and a dorsal attachment triangular -ring. It should have adjustable shoulder and thigh straps.
	<b>ACCESSORIES</b>		If required it should be available with accessories like Kinetic Energy absorbers, Lanyards, Karabiners.
<b>38</b> <u>SPECIFICATION OF RAIN COAT</u>			
S.No.	Item	Description	Reference IS Code
1	Material of Raincoat with Cap/ hood and separate water proof trouser.	Light duty (Nylon Base) (Type LN) coated with PVC	As per IS: 3322 (Part-I)-1987 or latest
2	Total mass per unit area, g/m <sup>2</sup> Min	270	As per IS 3322 : 1987 or latest as per IS 7016 (Part-I)1982 (reaffirmed -2012 ) or latest
3	Tear Strength in N, Mins:		As per IS: 7016 (Part-3)/1981 or latest
	a) Longitudinal direction	10	
	b) Transverse Direction	10	
4	Breaking strength in kg/5cm, Min:		Tested as per IS: 7016 (PartII)/1981 or latest
	a) Longitudinal direction	100	
	b) Transverse Direction	100	

5	Flex Cracking, number of cycles, Min,	Shall exhibit no cracking after 500000 cycles	Tested as per IS: 7016 (Part4)/1973 or latest
6	Coating adhesion not more than 10mm	1.8	Tested as per IS: 7016 (Part5)/1973 or latest
	separation of the plies under load, kg, Min:		
7	Resistance to water penetration in cm head of water, Min	150	Tested as per IS: 7016 (Part7)/1986 or latest on fabric and joints at taped portion
8	Heat aging, mass loss of coating, Percentage, Max:	5	Tested as per IS: 7016 (Part8)/1975 or latest
9	Cold cracks in °C, Max:	-20	Tested as per IS: 7016 (Part10)/1981 or latest
10	Fusion	No cracking or disintegration of face coating separation without damage to coating	As per appendix "A" of IS:3322 (Part-1)-1987 or latest
11	Blocking	Separation without damage to coating	Tested as per IS: 7016 (Part9)
			/1973 or latest
12	Colour fastness to light, Min:	4	As per appendix B of IS:3322 (Part-1)-1987
13	Colour fastness of rubbing, Min:	Coating shall not stain	Tested as per appendix "C"
			of IS: 3322 (Part-1) -1987 or latest
14	Jacket -Pocket	02 Nos of pocket of 6x6 inches size with flap on front side of	
		jacket (ensuring proper water proneness of jacket) at the waist level i.e. lower side of jacket.	
15	Sleeve	Baggies Style	
16	Synthetic Slide fastener (Jacket)	Plastic /Nylon Vizion, Normal open end, Type "C" Heavy (H) designation in orange colour matching with rain coat fabric.	As per IS 14181- Part1):2002 or latest and tested as per IS 14181 (Part-2) : 2002 or latest
17	Slide fastener (Zipper) Cover	Extra cover on slide fastener (Zipper)	
18	Slider with puller Jacket	Auto locking type, in Matching colour with jacket fabric	As per IS 14181- Part1):2002 or latest and tested as per IS 14181 (Part-2) : 2002 or latest
19	Bottom Adjustable Jacket	Pulling Type Cord with Lock	
20	Wrist Adjustable	Wrists adjust with elastic	

21	Trouser –Waist Adjustable	Tying Cord with Lock	
22	Trouser-Waist Adjustable	Full Round Elastic Tape, 2-inchwide (plus /minus half inch)	Confirming to IS 9686-1980 or latest
23	Trouser-Bottom Adjustable	Hook & Lock Type	
24	Identification of fabrics	Nylon	As per IS 667-2003 or latest
25	Retro –Reflective Tape	Vertical and horizontal retro reflective strips of 50mm having minimum 50 wash, at jacket all around on front and back as per attached drawing. With printed reflective logo of SOUTHCENTRAL RAILWAY of size at least 6-inch diameter on back side on the jacket.	Retro-Reflective tape confirming to IS15809:2008 or latest
26	Seam Joints and sealing	All seams and joints should be tapped from inside with heat seal, transparent on all stitched joints	
27	Colour	Florescent Orange Colour Shade High Visibility Type-2, Class-3.	As per IS 15809:2008 or latest
28	Label	All rain coats should be levelled with	
		• Brand/Manufacturer name.	
		• Size	
		• Wash care label	
		Manufacturing month and year.	
29	Packing cover of each rain coat in the form of pouch with zip & sticker	Plastic /Nylon Vizlon, Normal closed end fastener, Type ‘A’ Light special (LS) designation in orange colour matching with rain coat fabric	As per IS 14181 (Part1):2002 or latest and tested as per IS 14181 –(Part-2) or latest
30	Guarantee	One Year	

**Note:-**

1. Sample for feel, finish & comfort shall be provided by vendor for approval of consignee within 15 days of PO before bulk supply.

2. Above mentioned tests are to be carried out at any NABL approved lab as per relevant IS/Specification or tender sample.
3. Drawing is attached as Annexure "A"
4. Sizes will be provided after issuance of Purchase Order.

<b>DIMENSIONES FOR RAIN COAT ORANGE COLOUR (in inches)</b>					
JACKET					
SL No	SIZE	CHEST	LENGTH	BOTTOM	SLEEVE
1	S	46 ( ± 1 INCH)	26 ( ± 1 INCH)	46 ( ± 1 INCH)	21 ( ± 1 INCH)
2	M	48 ( ± 1 INCH)	27 ( ± 1 INCH)	48 ( ± 1 INCH)	22 ( ± 1 INCH)
3	L	50 ( ± 1 INCH)	28 ( ± 1 INCH)	50 ( ± 1 INCH)	22 ( ± 1 INCH)
4	XL	52 ( ± 1 INCH)	29 ( ± 1 INCH)	52 ( ± 1 INCH)	23 ( ± 1 INCH)
5	XXL	54 ( ± 1 INCH)	30 ( ± 1 INCH)	54 ( ± 1 INCH)	23 ( ± 1 INCH)
6	XXXL	56 ( ± 1 INCH)	31 ( ± 1 INCH)	56 ( ± 1 INCH)	24 ( ± 1 INCH)

TROUSER				
	SIZE	LENGTH	THIGH	BOTTOM
1	S	38 ( ± 1 INCH)	13 ( ± 1 INCH)	9 ( ± 1 INCH)
2	M	39 ( ± 1 INCH)	13.5 ( ± 1 INCH)	9 ( ± 1 INCH)
3	L	39 ( ± 1 INCH)	14 ( ± 1 INCH)	10 ( ± 1 INCH)
4	XL	40 ( ± 1 INCH)	14.5 ( ± 1 INCH)	10 ( ± 1 INCH)
5	XXL	41 ( ± 1 INCH)	15 ( ± 1 INCH)	11 ( ± 1 INCH)
6	XXXL	41 ( ± 1 INCH)	15.5 ( ± 1 INCH)	12 ( ± 1 INCH)

<b>39</b>	<b><u>HARD -TOE BOOT (IN PAIR):-</u></b>	
a)	<b>Scope</b>	
	This document covers specifications for the fire fighter's thermal protective gear providing protection to the fire fighter's feet and shall comprise of boots.	
b)	<b>Boots</b>	
	The fire fighters boot shall be CE market and to meet the requirement of EN 345 or equivalent International standards. Boots should have outer shell of Flame Retardant Rubber/ Leather and shall have lining for better in solution and head resistant. Loops for assisting the wearing shall be provided. The size of the boot shall be provided at the time of supply order.	
	*Note: Boot shall meet the requirements of the standard specified and certificate to this effect from an independent laboratory/test house of International repute shall be furnished along with the technical offer.	
<b>40</b>	<b><u>Gum Boot (in pair):-</u></b>	
	Sole	rubber
	Package Content	1 Pair Safety Shoes And Size -8/9/10
	Heat Resistant	
	Slip Resistant	
	Light in weight	
	ISI Mark	
	Height	15-18 Inch
<b>41</b>	<b><u>PRY BAR</u></b>	

a)	Size :	Length 5.5. feet, diameter/thickness 1"
b)	Material:	Made of tempered steel
c)	Application:	To align, adjust, move & pry BIS Specification
d)	The bars shall be heat treated to obtain a minimum hardness value of 320 HV.	
e)	The material shall be suitable quality steel such as wrought steel	
f)	The bars shall be forged clean & in one piece.	
<b>42</b>	<b><u>TIN SNIPE</u></b>	
	Size	Length 300 mm
	Application	For cutting tin sheets of small thickness.
<b>43</b>	<b><u>KODAL</u></b>	
	Spades should be of rectangular shape with provision to incorporate wooden handle. The material used for fabrication should be iron of suitable grade.	
<b>44</b>	<b><u>BELCHA</u></b>	
a)	Size	Length 12", width 10", of rectangular shape
b)	Material	made of wrought iron
c)	Handle	Provision of wooden handle to be incorporated
d)	Application	Suitable for various types of earth work BIS Specifications
e)	The shovel blade shall be made of suitable quality sheet steel as such T- 50, T-55.	
f)	Each blade shall be made in one piece without any welded or riveted joint.	
g)	Shovels to be supplied with handles complete	
h)	The blades shall be well formed & cleanly made	
i)	The blades shall be free from scams, splits, cracks	
<b>45</b>	<b><u>DAW</u></b>	
	<b>Descriptions</b>	
a)	Blade Material	Carbon Steel
b)	Handle Material	Wood
c)	Blade Edge	Plain
d)	Made by traditional iron workers with their own hands for those who want high quality and performance.	
e)	The knife's single-brass riveted construction securely attaches the handle to the iron-steel FULL TANG which runs from the blade through the end of the wooden handle hard enough for the whole blade for the hard work and durability. It can offer comfortable to grip and non-slip effect	
f)	Weight	Not Less than 01 Kg with wooden handle
<b>46</b>	<b><u>Hacksaw</u></b>	
a)	Size	Adjustable length 250 mm to 300 mm with handle
b)	Blade Type	High speed steel blade, size 300 mm x 12.5 mm x 0.63 mm
c)	Body	Tubular frame body
d)	Provision	for tightening & loosening of blades BIS Specification Hack Saw frame
e)	Type	Open grip adjustable flat hacksaw frame
f)	Nominal size	250-300 mm
g)	Impact test	Dropped on a concrete floor from a height of 3 meters
<b>47</b>	<b><u>TARPAULIN</u></b>	

<b>SPECIFICATION OF TARPAULIN</b>		
a)	Size	6 X 6 meter
b)	Material	Made of water proof canvas cloth, its edges should be secured by stitching a strip of similar cloth or otherwise of one inch width along the periphery of Tarpaulin.
c)	Colour	Green / Navy Blue
<b>BIS SPECIFICATIONS</b>		
d)	Basic fabric	Shall be made from cotton duck or cotton canvas
e)	Common proofing shall be prepared with the ingredients consisting essentially of paraffin wax, a suitable pigment and aluminium stearate.	
f)	Resistance to microbial attack	The Material shall be rendered resistant to microbial attack treating with suitable rot-proofing agent.
g)	Sweating Test	The common proofed canvas / duck shall not stain the blotting paper when tested as prescribed.
h)	Breaking strength not less than 90 % of specified value prescribed for the basic fabric. (As per IS: 2089-1977 Page No.-4 & 5)	
<b>48</b>	<b><u>MANPACK</u></b>	
a)	Frequency	MHz 868 - 2500
b)	Power Handling	30 W
c)	Polarisation	Vertical
d)	Gain (dB)	3 to 4
e)	Mass (kg)	0.5 to 0.6
f)	Size (m)	0.45 to 0.55
g)	Maximum VSWR	< 2.5
<b>(II) MFR EQUIPMENT</b>		
<b>1</b>	<b><u>GLASS EYE PROTECTION</u></b>	
	<b>UVEX-</b>	Scratch resistant lens of unbreakable Polycarbonate with Maximum UV protection and frosted brow guard to block Overhead glare Side shields, which are adjustable. Adjustable temple length in four positions Overall shape should be so as to prevent any splash of Bodily fluid entering the eye.
<b>2</b>	<b><u>LATEX GLOVES</u></b>	
a)	<b>Size</b>	Medium, & Large ( final required sized will be mentioned in supply order).
b)	<b>Material</b>	Natural rubber Latex, single use disposable' powder free Sterilized sealed packs Should meet emergency medical glove requirements of NFPA1999 standard on protective clothing for emergency medical operations, 1997 edition.
<b>3</b>	<b><u>THERMOMETER DIGITAL</u></b>	
	Battery Operated ISI Marked digital thermometer with reading in both centigrade and Fahrenheit DED display with day night visibility Beep Alerts, Memory for limited number of readings.	
<b>4</b>	<b><u>MANUAL SUCTION UNIT</u></b>	
a)	Volt	230Vac
b)	Rating of Motor	Continuous

c)	Suction Bottle Capacity 2 x 2000ml minimum (with safety value)	
d)	Guage	0 to 760 mm Hg
e)	Pump Oil lubricates rotary pump	
f)	Suction Tubings	ID7mm, 5m long and non-collapsible
g)	Should have air tight lids	
h)	Should have a noiseless operation	
i)	Should provide filter to absorb moisture and water particles entering into the motor	
j)	Should have an external provision for topping up of lubricant	
k)	Should be well designed, cabinet made of mild steel powder coated	
l)	Should bear ISI mark	

**5**

**B.P. APPARATUS DIGITAL**

a)	Large screen crystal display Automatic with built in pump	
b)	Pressure Detection Mechanical Capacitance Pressure Sensor	
c)	Measurement range	30-280 mm lg
d)	Additional Function Pulse meter	20-255 beats /minutest of memory
e)	Weight	400 grm
f)	Dimensions	163 mm(W) x 138 mm (D) x 62 mm(H)
g)	Arm cuff with air tube 70 cm	

**6**

**PNEUMATIC SPLINTS SET**

a)	Material radio lucent, light quality plastic	
b)	With inflation valve and closing clamp, fixing by radio lucent zipper	
c)	Set of six sizes hand and wrist half arms, full arms, foot and ankle, half leg and full leg, reusable sets with carry bag	

**7**

**ROLL BANDAGE (15 cm)**

a)	Dimensions	15 cm x 5 meter length
b)	Gauze bandage of superior quality, cross net weaving fabricated	
c)	From cotton fibers	
d)	Sterilized single packs	

**ROLL BANDAGE (10 CM)**

a)	Dimensions	7 cm x 5 meter length
b)	Gauze bandage of superior quality, cross net weaving fabricated from cotton fibres	
c)	Sterilized packs	

**8**

**BAG VALVE MASK (ADULT) :-**

a)	Material texturized silicon, and autoclavable	
b)	Size -	Adult, compressible, reusable silicon bag of 1600 ml capacity
c)	Component -	Self-inflating silicon bag of 1600 ml capacity, One way inflating valve, facemask, Oxygen reservoir, Oxygen port connecting tube.
d)	Transparent soft pre inflated plastic facemask. Good quality connecting tube of 3 m lengths.	
e)	Standardized 15/22 mm fitting. Adjustable hook and loop handle. Collapsible body and reservoir.	

f)	PEEP Valve/elbows included non-jam valve with max Oxygen flow of 15 L /min. Carry case to be provided.	
<b>9</b>	<b><u>BAG VALVE MASK (CHILD) :-</u></b>	
a)	Material texturized silicon, and autoclavable	
b)	Size -	Child, compressible, reusable silicon bag of 500 ml capacity
c)	Component -	Self-inflating silicon bag of 500 ml capacity, One way inflating valve, facemask, Oxygen reservoir, Oxygen port connecting tube.
d)	Transparent soft pre inflated plastic facemask. Good quality connecting tube of 3 m lengths.	
e)	Standardized 15/22 mm fitting. Adjustable book and loop handle. Collapsible body and reservoir.	
f)	PEEP Valve/elbows included non-jam valve with max Oxygen flow of 10 L /min. Carry case to be provided.	
<b>10</b>	<b><u>BAG VALVE MASK (INFANT) :-</u></b>	
a)	Material texturized silicon, and autoclavable	
b)	Size -	Infant, compressible, reusable silicon bag of 1600 ml capacity
c)	Component -	Self-inflating silicon bag. One way inflating valve, facemask, Oxygen reservoir, Oxygen port connecting tube.
d)	Transparent soft pre inflated plastic facemask. Good quality connecting tube of 3 m lengths.	
e)	Standardized 15/22 mm fitting. Adjustable book and loop handle. Collapsible body and reservoir.	
f)	PEEP Valve/elbows included non-jam valve with max Oxygen flow of 8 L /min. Carry case to be provided.	
<b>11</b>	<b><u>CPR MASK :-</u></b>	
a)	Face mask with one way valve and filter	
b)	Used as physical barrier for mouth to mouth ventilation	
c)	Ventil INC Hation tube length 1-1.25 Inch	
d)	Pre inflated cuff for effective and good seal transparent mask	
e)	Oxygen delivery inlet	
f)	Hard case for carrying mask and one microbial i.e	
i)	Size 7 h Inch X 7V2 Inch.	
ii)	Strength : 12 Ply with good absorbent quality gauze and cotton	
g)	Warranty – Minimum two years	
<b>12</b>	<b><u>RIGID SPLINT (SET)</u></b>	
a)	Material:	Rigid splint of light weight material/wood; durable and Radio lucent
b)	Thickness:	1 cm
c)	Length:	90 cm
d)	Width	7 cm
e)	Padded by equal thickness foam of superior quality and enclosed By water proof, hypoallergenic, ultra-thin synthetic layer.	
<b>13</b>	<b><u>PORTABLE OXYGEN CYLINDER:-</u></b>	
	IS -7285 : part 1:2004 : " Refillable seamless steel gas cylinder Specification : -	
	Part 1 :	Normalized steel cylinder.



<b>14</b>	<b><u>FACE MASK:</u></b>	
	Specification Same as Sl. No. 36 of CSSR Equipment.	
<b>15</b>	<b><u>GOWN:</u></b>	
a)	Size	Free Size
b)	Material Type	PP Spun Bond Non-Woven
c)	Colour	Blue, Green, White
d)	Sleeve Type	Half and Full Sleeve
e)	Pattern	Plain
<b>16</b>	<b><u>ABSORBENT COTTON WOOL:-</u></b>	
a)	Usage	Medical
b)	Type	Plain
c)	Pattern	Plain
d)	Material	Cotton
e)	Color	White
f)	Weight	20 - 1000gm/pkt
<b>17</b>	<b><u>Crape Bandage:-</u></b>	
a)	Size	2m- 4 m
b)	Width	4cm -10 cm(in 3 type)
c)	Fabric	Cotton
<b>18</b>	<b><u>Gauze Dressing</u></b>	
a)	Non adherent dressing U.S.P. \	
b)	Size	10 x 10 cm
c)	Package	sterilized 10 pieces/pack
<b>19</b>	<b><u>BANDAGE TRIANGULAR</u></b>	
a)	Dimensions	90 x 90 x 120 cm size bandage
b)	Material	good quality calico material
<b>20</b>	<b><u>Vaseline Gauze Dressing (in pack):-</u></b>	
a)	Non-adherent dressing U.S.P. impregnated with	
b)	U.S.P. white Petrolatum	
c)	Size	10 x 10 cm
d)	Package	sterilized 10 pieces/pack
<b>21</b>	<b><u>Dressing Abdominal (in pack):-</u></b>	
a)	Size	7 1/2" x 7 1/2 "
b)	Strength	12 ply with good absorbent quality gauze and cotton
c)	Layer in between	
d)	Package	pre sterilized ready to use individual packs
<b>22</b>	<b><u>BAG VALVE MASK:</u></b>	
	Specification Same as Sl. No. 08 of MFR Equipment.	
<b>23</b>	<b><u>Collar Stiff Neck Regular: -</u></b>	
	COLLAR STIFF NECK REGULAR (AS PER IS: 11569)	
a)	Rigid cervical collar	Extrication type

b)	Material	soft plastic rigid enough to avoid 70% of neck movement and lined inside with soft cushion
c)	Padded chain rest for application by sweep technique.	
d)	Colour coded and measure holes for easy identification and measurement of measured of correct size.	
e)	Velcro for easy fixation.	
f)	MRI/CT Scan compatible; radio lucent	
g)	Tracheal access opening for advanced airway procedure;	
h)	Rear panel opening for cervical spine palpation	
i)	Latex free and durable	
j)	This size of finished c-collar should not be less than 6 cm when measurement as per prescribed procedure.	
<b>24</b>	<b><u>TRIAGE RIBBON</u></b>	
a)	Material	satin and colour fast
b)	Width	2.5 cm
c)	Length	50 meters
d)	Colour	Green / Red / Yellow / Black
<b>25</b>	<b><u>PENLIGHT</u></b>	
a)	Medi	torch to check pupil
b)	Length	10- 15 cm; light weight
c)	Focus	sharp
d)	Material	durable plastic mould
e)	Operated with 2 batteries of 1.5 V; durable	
f)	Provided with belt hook (press click mechanism)	
<b>26</b>	<b><u>RESCUE STRETCHER (SPINE):</u></b>	
	Specification Same as Sl. No. 19 of CSSR Equipment.	
<b>27</b>	<b><u>Savlon</u></b>	
	As per company / manufacturer specification.	
<b>28</b>	<b><u>Betadine</u></b>	
	As per company / manufacturer specification.	
<b>29</b>	<b><u>Omnigel</u></b>	
	As per company / manufacturer specification.	
<b>30</b>	<b><u>Silver nitrate gel</u></b>	
	As per company / manufacturer specification.	
<b>31</b>	<b><u>Soframycine</u></b>	
	As per company / manufacturer specification.	
<b>32</b>	<b><u>GLUCOMETER</u></b>	
a)	Monitor with lancing system, coding chip, glucose strips, and controls.	
b)	Principle Glucose dye oxidoreduetase mediator reaction (0.7U)	
c)	Monitor, light weight, waterproof, and screen size 5x3 cm with coding chip insert	

d)	Reading time 05 sec, Range 10-600 mg/dl accuracy deviation error with in 4%. Limit of Detection 10 mh/dl	
e)	Sample compatibility fresh capillary/arterial or EDTA venous blood	
f)	Memory up to 400 readings	
g)	Temperature of compatibility :	10 degree to 40 degree Centigrade
<b>33</b>	<b><u>KIDNEY TRAY</u></b>	
a)	Material	Stainless Steel
b)	Size 8" Features for easy collection of draining fluids, kidney shaped with one side indented and concave and other side convex	
<b>34</b>	<b><u>SURGICAL TAPE</u></b>	
a)	Dimensions:	2.5 cm x 9 meter
b)	Hypoallergenic surgical micro pore adhesive tape	
<b>35</b>	<b><u>SCISSORS</u></b>	
a)	Material	Stainless Steel
b)	6" scissor for cutting bandages and gauze	
<b>36</b>	<b><u>JELONET</u></b>	
a)	Non adherent dressing U.S.P. impregnated with	
b)	U.S.P. white Petrolatum	
c)	Size	10 x 10 cm
d)	Package	sterilized 10 pieces/pack
<b>37</b>	<b><u>OXYMETER</u></b>	
	Pulse ox meter is used for continuous monitoring of functional oxygen saturation of arterial haemoglobin (Spo2) and pulse rate. It is intended for use with neonatal, paediatric adults patients who are well or poorly per fused, in hospital, hospital type facilities, intra-hospital transport and home environments. The Following guidelines of standard may be reeferd pulse ox meter conforming to MDD93/42/EEC OR DOC.MHD (312)/IEC 60601-2-61	
	<b><u>MEASUREMENT RANGE:</u></b>	
a)	SPO2, 2 1- 100 %	
b)	Pulse Rate 20 -	300 beats per minute (bpm)
c)	Accuracy	
d)	SpO2	
e)	Adults 70 - 100 % +2 digit	
f)	0-69 % specified	
g)	Neonates 70 - 100 % + 3 digits	
h)	0-369 % unspecified	
i)	Pulse Rate	
j)	20-250bpm + 3bpm	
k)	Asses 68% of the population	
l)	Power Requirements	
m)	100-240 VAC	
n)	50-60 Hz	
o)	15 VA	
p)	Pulse Rating	250 A/2A
q)	Battery Type Lead acid with 3 hrs of Battery Backup	
r)	Operating Temperature	10 to 450 C

s)	Sensor within	Physiologic range for specified accuracy
t)	Weight	1.3 Kg (Max, without pole amount screws)
u)	Accuracy	50-60 %, Range + 3 %, 70 -100 % Range + 2%
v)	Trends	Pulse Rate - 1 hr, 12 hr, 24 hr, SAO2, - 1 hr, 12 hr 24 hr
w)	Numeric data display	SPO2 & Pulse Rate (LED+LCD) with backlit LCD display for plethysmograph with adjustable brightness. Auto gain control system.

### **(III) DEEP DIVING EQUIPMENT**

<b>1</b>	<b><u>INFLATABLE BOAT:-</u></b>	
<b>1</b>	<b><u>SCOPE</u></b>	
	This specification relates to the detailed requirements for the design, construction, tests & trials, documentation and warranty of 4.5m Inflatable Boats, intended for West Bengal Police DMG.	
<b>2</b>	<b><u>FUNCTIONS</u></b>	
2.1	The inflatable boat shall perform the following tasks:-	
a)	Search & Rescue during floods	
b)	Transport men and material	
2.2	The boat shall be designed to be seaworthy and carry out functions listed at Para 2.1 with full complement and at speeds (not less than 05 knots commensurate with 30HP OBM). The craft shall be stable and should meet swamp & stability requirement specified at Para 18.16 of this Specification.	
2.3	The boat shall be designed to have good maneuverability and throttle response throughout its speed range (using 30HP OBM 4 stroke) and particularly when coming alongside or breaking away from an underway vessel at its full load and complement.	
<b>3</b>	<b><u>PRINCIPAL PARTICULARS:-</u></b>	
3.1		
a)	Length exterior	Not less than 4500 mm
b)	Breadth exterior	Not less than 1960 mm
c)	Length interior	min. 3200 mm
d)	Breadth interior	min. 1000 mm
e)	Dia. of Buoyancy Tube	Not less than 480 mm
f)	Carrying Capacity	10 men (82.5 Kg per person)
g)	Weight of the craft	Not more than 90 kg for boat & Not more than 40 Kg for the floor boat & accessories (Without OBM)
3.2	The craft shall be built of Buoyancy Tube made of Composite Fabric consisting of Hypalon (outer layers) and Neoprene (inner layers) of 1670 Dtex or equivalent, inspected by IRS (Indian Register of Shipping) as per ISO 15372 and IRS Rules. The bottom floor of the boat shall be made of the same fabric as buoyancy tube. Reinforcement of the boat shall be provided using rubberized strips of Hypalon (outer layer) and Neoprene fabric (inner layer). The stern of the boat formed by a transom shall be made of Marine Plywood on which OBM can be mounted.	
<b>4</b>	<b><u>APPROVAL AND INSPECTION BY INSPECTION AUTHORITY</u></b>	
4.1	The Craft is to be constructed under the approval of Indian Register of Shipping (IRS) in accordance with ISO 6185, Part 3 (2014) and the minimum requirements specified this requirement. Parameters not mentioned in this specification would be in accordance with ISO 6185, Part 3 for inflatable crafts, so as to ensure that the craft meets all functional/material requirement specified in this specification.	
4.2	Class approval shall cover following aspects:-	
a)	Design vetting	
b)	Drawing approval	

c)	Material Inspection
d)	In-process Inspections
e)	Tests & Trials
5	<b><u>CONSTRUCTION DETAILS</u></b>
A)	<b><u>Buoyancy Tube</u></b>
5.1	The material used for buoyancy tube shall be of Hypalon (outer layers) and Neoprene (inner layers) composite fabric, of 1670 Dtex or equivalent inspected by IRS (Indian Register of Shipping) as per ISO 15372. The Buoyancy Tube shall be divided in to a minimum of 04-06 air tight compartments by means of baffles/bulk-heads. Each compartment shall be fitted with a combined inflation/deflation valve. The valves shall be made of rubber moulding and plastic nylon material or alternate marine grade material approved by class. The valves should be of reputed make and approved by Classification society for use on inflatable crafts.
5.2	The ends of the tube shall be conical and should terminate in suitably stiffened rubber conical flat ends to take impact loads during coming alongside/lowering. The two legs of the Buoyancy Tube shall be parallel and the width readings at the transom and at midship shall not differ by more than 10mm.
5.3	The tube shall be strong enough to sustain the effects of ramming whilst coming alongside. The upper layer shall be strong enough to bear the rubbing impact against rough surfaces / barnacles. In addition, an emergency repair kit with quick drying adhesive and ready use repair patches shall be provided.
5.4	The construction of the Buoyancy Tubes should be in accordance with class approved drawings and production processes.
5.5	The attachment of bulkheads in the buoyancy tube shall be such that each chamber is rendered air tight under specified pressure.
5.6	The seams in the buoyancy chambers shall have an overlap not less than (Three) 3cm width and should be pasted with cold glue vulcanization process or equivalent Class approved process. An additional strip is to be glued at the edge of each panel junction as well as strip inside all assembled parts in order to ensure a perfect water tight preventing from any leakage.
B)	<b><u>Inflation/Deflation Valve</u></b>
i)	The Inflation/Deflation valve shall combine a high pressure air connection with a deflation valve in each air tight chamber and shall be as per ISO 6185-3 (2014)
ii)	The valve shall be fitted proud of the buoyancy tube on inner side of the buoyancy tube to enable identification/location in darkness
iii)	The material of inflation/deflation valve fitted on the buoyancy tube shall be of suitable material for marine application
iv)	Alternate design/arrangement for inflation/deflation valves which meet the above functional requirements is acceptable subject to the approval of Classification Society
C)	<b><u>Floor</u></b>
5.7	The floor shall be made of Hypalon (outer layers) and Neoprene (inner layers) composite fabric, of 1670 Dtex or equivalent inspected by Indian Register of Shipping (IRS) as per ISO 15372. The floor shall be bonded to the underside of the buoyancy tube and attached by a floor retaining strip to the transom board. It shall be strengthened on its underside in way of the keelson by a keelson chafing strip of minimum 100mm wide fabric. Chafing strips shall also be bonded to the underside at the after ends of the tubes
5.8	Special attention shall be paid to the attachment of the floor to the buoyancy tube to ensure that the resulting joint is water tight. Special care is also to be taken that the floor is perfectly taut and smooth and has no puckers, when the craft is assembled and ready for use
D)	<b><u>Self-Bailers/Drain Valves</u></b>

5.9	Two self-bailers akin to NRV shall be located on the lowermost part of the transom board near the rear end fitment of the keel close to the center line. The same shall be provided with a flexible flap to overcome pressure on the NRV in following seas. The self-bailers shall automatically remove water from the craft at higher speeds	
E)	<b><u>Transom</u></b>	
5.10	The transom board shall be fitted and securely bonded to the buoyancy tube and the floor so as to provide a water tight joint. The Transom shall be designed for use with 30 HP OBM. The transom shall be made of marine plywood coated with FRP/GRP of appropriate thickness and to be suitably fitted out with engine mount made of marine grade Aluminium alloy plate (IS-737) and chafing patch. The Transom shall also be suitably designed to help locate the after end of the Keelson. Hypalon coated fabric shall be pasted on the surface area of the transom to prevent it from damage as well as loosening from the tube body. Separate strip of suitable size shall be provided on the bottom of the transom to minimize chance of damage. Details regarding craft identification No. etc. shall be engraved on a builder's plate fitted on the inner side of the transom on starboard side. Towing rings, cleat and 'U' bracket shall be provided as per approved drawing	
F)	<b><u>Floor Boards</u></b>	
5.11	The Floor boards shall be made of High Strength Tempered Anodised marine grade Aluminium alloy with a non-skid finish. These boards (Four/Five pieces) shall be interconnected together to form a rigid platform. The forward/bow piece of floorboard may be made of marine plywood (IS 710) coated with FRP lamination Alternatively, Floorboard can be made of High Strength Tempered Anodised marine grade Aluminium alloy roll-up floor with a non-skid finish on top to form a rigid platform	
G)	<b><u>Keel</u></b>	
5.12	The boat shall be provided with inflatable keel of suitable size to provide the rigidity & stability during operation of boat	
H)	<b><u>Stowage Pockets</u></b>	
5.13	Minimum One Stowage pockets shall be attached to the buoyancy tube in the forward in board side. The stowage pockets provided shall be capable of holding dynamic weight of 6 Kgs. Holes are to be provided at the bottom of the pocket to drain water (Size 340mm x 280mm x 90mm)	
I)	<b><u>Rubbing Strips</u></b>	
5.14	Following single piece Rubbing Strips of moulded neoprene rubber of 2" width (where not mentioned) and extending along the entire length shall be attached to the buoyancy tube for the protection of the craft:-	
a)	Bow rubbing strip 4"	
b)	Outer anti chafing strip 100mm wide on both sides	
c)	Anti-Chafing Strip under Keel	
d)	Two Beaching Strips 100 mm wide under buoyancy tubes	
e)	Chafing patch for coxswain's position	
J)	<b><u>Carrying Handles</u></b>	
5.15	Minimum Four to six Carrying handles shall be provided, two on each side and one front lifting handle. The handles shall be suitably reinforced to take a weight of 300 kgs all together. The handles shall be of Moulded Neoprene Rubber bonded to the buoyancy tubes	
K)	<b><u>Towing Fittings and Securing Arrangements</u></b>	
5.16	Following Towing fittings shall be provided. Towing fittings shall consist of suitably sized D Shackle of SS AISI 316(to pass towing rope) securely attached to fabric reinforcing patches bonded to the buoyancy tube	
i)	<b><u>Towing/ Lifting fittings, forward</u></b>	One on either side of the craft, below the buoyancy tube at the beginning forward curve in the buoyancy tube

ii)	<b><u>Towing fittings, aft</u></b>	One on either side on the transom shall be used if craft is employed for towing purposes
iii)	<b><u>Load Test</u></b>	The towing arrangement shall be load tested as per ISO 6185-3
L)	<b><u>Oars &amp; Oar Securing Assemblies</u></b>	
5.17	Two nos. of oars to be provided. Oars shall be positioned parallel /30° to the vertical when secured inside the inboard side of buoyancy tubes. Adequate securing arrangement shall be provided so that the oars are intact	
M)	<b><u>Air Bellow pumps</u></b>	
5.18	Heavy duty bellow type foot pump (reputed make) of suitable design shall be provided to inflate the craft in approximately 20 minutes. The housing of pump is to be made of a heavy duty yet light weight marine composite. The Bellow to be made of coated reinforced fabric and all metal parts should be of stainless steel	
5.19	In addition, one heavy duty electric inflation pump of reputed make (220-V AC) and one pressure gauge (capable of measuring pressure of tubes) of reputed make to be provided	
N)	<b><u>Fabric Fittings</u></b>	
5.20	Patches, doublers, anchorages, etc. shall be made and positioned as shown on the drawing which indicates finished size. Suitable tape/webbing reinforcement shall be used to distribute stresses adequately	
O)	<b><u>Grab line</u></b>	
5.21	There shall be grab line nylon braided (as per IS 4227) of dia. min. 12mm all along the sides for safety to be provided	
6	<b><u>MATERIAL SPECIFICATIONS</u></b>	
6.1	Material Specification for the various items to be used for construction of Inflatable crafts are as follows:-	
a)	The Material Specification for buoyancy tube, inflatable keel and floor hypalon (Outer layer) and neoprene (Inner layers) composite fabric of 1670 Dtex or equivalent as per ISO 15372 and inspected by Indian Register of Shipping (IRS).	
b)	The Material Specification for floor system as per recognized national/international standard.	
c)	The material specified shall be strictly adhered to and no deviation is permitted. Materials referred to as approved shall be so approved by the Classification Society in accordance with the requirement specified in this Rule.	
d)	The Colour of all exposed surfaces / material shall be highly visible orange color or Black.	
	<b><u>Adhesive</u></b>	
6.2	The adhesive shall be Neoprene based contact adhesive of good quality and to be suitable for service in tropical environments as per specification. The adhesive shall consist of a dispersion of polychloroprene in a low boiling point solvent and may have additions of resins to promote building tack. The adhesive shall consist of 2 components, Part 1 and Part 2, Part I being the basic neoprene dispersion and part 2, the accelerator (hardener).	
6.3	The adhesive should be approved by Classification Society for use on inflatable and meeting the minimum requirements specified in ISO 6185-3 (2014).	
6.4	Alternate adhesive superior in properties are also acceptable subject to type approval of Classification Society as per ISO 6185-3(2014).	
7	<b><u>PRINCIPAL COMPONENTS OF EACH BOAT</u></b>	
	The principal components of the complete assembly are as follows:-	
7.1	<b><u>HULL</u></b>	
7.1.1	Buoyancy tube – Divided in minimum 04 compartments and complete with rubber conical flat ends.	
7.1.2	Bulkheads – Dividing the buoyancy tube in to min.-4 compartments.	
7.1.3	Inflation / deflation valves – one set per chamber.	
7.1.4	Transom – fitted with engine mount, anti-chaff patch.	
7.1.5	Floor – in proofed fabric.	

7.1.6	Keelson chafing strip – 1 No.	
7.1.7	Aft chaffing Strip – 1 No	
7.1.8	Inflatable Keel – 1 No.	
7.2	<b>Hull fittings for each boat</b>	
7.2.1	Bow Rubbing strip	1 No
7.2.2	Side Rubbing strip aft	1 set
7.2.3	Carrying Handles (Patch rubber with handle)	4 Nos.
7.2.4	Grab line	1 set
7.2.5	SS to AISI - 316 Hook on transom	2 Nos
7.2.6	SS to AISI - 316 "D" rings	2 Nos
7.2.7	Pockets for stowage (One for wireless set & one for inflation bellow pump)	1 Nos
7.2.8	Oars (Shall be light weight not more than 4Kgs and positively buoyant in water)	
7.2.9	Repair Kit (small) –	fabric patches 05, adhesive tube (Dendrite) 500gm, roughing tool, spanners of required sizes.
7.3	<b>Valises and store bags for each boat</b>	
i)	Heavy duty storage bag for Hull	01 No.
ii)	Storage bag for oars & other accessories	01 No.
7.4	<b>Additional Spares for each boat</b>	
i)	Inflation/ Deflation Valves	10 Nos.
ii)	Pressure gauge	01 No
iii)	Plugs for Water Drain	04 Nos.
iv)	NRV for Water Drain	10 Nos.
v)	Electric Inflation pump	01 No
vi)	Bellow Inflation Foot Pump	02 Nos.
vii)	Boat paddle	01 Pair
viii)	Patching material with adhesive to repair leak/damage in buoyancy tube.	
8	<b>PRODUCTION.</b>	
8.1	Manufacturing of the craft should be as per the detailed drawings approved by Indian Register of Shipping (IRS) and meeting the requirements mentioned in this specification. The production processes should also be approved and supervised by the IRS (Indian Register of Shipping).	
	<b>Tolerance</b>	
8.2	General tolerances on all dimensions shall be $\pm 1.5$ mm unless otherwise specified in this specification or approved by Classification Society. The exceptions to this general limit shall be in respect of stuck-on components length of webbing and cordage, and the overall dimensions of components etc; these items shall be given a sliding scale tolerance which increases in accordance with the magnitude of dimensions.	
	<b>Production Damages</b>	
8.3	Any Production damage irrespective of size shall be repaired by complete part / panel replacement only. The replacement is to undertaken by the contractor free of charge at the consignee place as soon as possible and in any case not later than one month from the date of receipt of intimation.	
8.4	No patch repair is permitted on buoyancy tube / floor. In case of production damages only part / Panel Replacement shall be permitted.	
8.5	Where a part panel replacement is necessary, the following parameters shall apply:	
i)	On the buoyancy tubes, not more than one part panel replacement will be permitted on each craft.	
ii)	On the floor not more than one part panel replacement will be permitted on each craft.	



9	<b><u>RECORDS</u></b>
	The builder shall develop and maintain records that demonstrate the effective operation of his quality control system and shall make these records available for review of the Inspecting agency. Inspection records shall include explicit identification of the material, part sub-assembly, equipment, sub-system or system, the nature and number of observations made, the number and type of deficiencies found the quantities approved or rejected and the nature of the corrective action taken, as appropriate. Records shall be retained until disposal is directed by the Inspector. The contractor shall furnish a copy of any record to the Inspector, on request.
10	<b><u>DRAWING &amp; DOCUMENTS</u></b>
	Within one month of placement of order the builder shall submit the design and manufacturing drawings for the approval of the Classification society. Construction of the craft is to commence only after the approval of all drawings by Class. Drawing approval should include approval of Classification Society for component level detailed production drawing required for manufacturing the craft.
10.1	As fitted Drawing / Documents, on successful completion of all tests / trails and prior to the delivery of the specific boat, the Builder shall supply to consignee to sets each of the following as fitted / as made drawings and documents with the craft.
10.2	Buoyancy tubes
10.3	End cones of buoyancy tube.
10.4	Floor and details of joint between floor and buoyancy tubes
10.5	Transom with details of joint between transom, floor and buoyancy tube
10.6	Assembly drawing for keelson and floor board.
10.7	Fitment details of each of fittings :-
(a)	Inflation / Deflation valves
(b)	Self-bailers
(c)	Rubbing Strips.
(d)	Carrying Handle.
(e)	Towing fittings,
(f)	OBM attachment drawings illustrating Engine Support.
(g)	Fuel Oil / LO system with system with storage provisions.
10.8	The builder shall also supply soft copy of all the As Fitted / As Made drawings to the consignee.
11	<b><u>INSPECTION</u></b>
11.1	The inspection authority for the boats will be Indian Register of Shipping (IRS). The complete inspection of the craft as mentioned at Para 4 of this specification will be undertaken by Classification Society as per approved QAP. Towards this builder will submit the draft QAP for the approval of Classification Society, within one month of placement of order.
11.2	The cost of conducting tests and the material required for the purpose are to be borne by the bidder. The suitable OBM (30 HP) and POL for conducting trials shall be provided by the builder at the site of trials. In case the builder premises does not have river front, the builder should transport the first craft to suitable location in India (mainland) specified by the order placing authority.
12	<b><u>USER ACCEPTANCE OF FIRST CRAFT OF EVERY ORDER</u></b>
	On successful completion and clearance post clearance from Classification Society, the first boat of the every order will be subjected to extensive user trials covering all functional requirements as well as test & trials brought out in this Specification. The trials shall be conducted jointly by Classification Society and Customer nominated team. Deficiencies observed by the trial team w.r.t the requirements stipulated in this specification should be liquidated by the builder at no extra cost. Subsequent crafts of the order shall be cleared by inspecting agency only after liquidation of all deficiencies observed during user acceptance trials of first craft.
13	<b><u>WARRANTY CLAUSE</u></b>

	The inflatable crafts supplied shall bear a warranty of the contractor, against defective material, workmanship and performance for a period of 24 months from the date of receipt of the consignment of the stores. During this period if any of the stores supplied found defective the same shall be replaced by the contractor free of charge at the consignee place as soon as possible and in any case not later than one month from date of receipt of intimation by the contractor. Delay in replacement /repair beyond one month shall invite penalty @ 0.5% per week or part thereof of the cost of goods/stores/parts/assembly in question. In addition Inflatable crafts should have manufacturers /builders warrantee for 05 years for the fabric used and 24 months for the adhesion at joints, under normal exploitation.
14	<b><u>INSPECTION AUTHORITY</u></b>
	The inspection authority for the boats will be IRS (Indian Register of Shipping).
15	<b><u>DEFLATION AND DISMANTLING</u></b>
	When deflated and dismantled the craft and components shall be stowed in heavy duty top-proofed PVC coated nylon valises fabric as defined in Para 7.11 above
16	<b><u>STENCILLING AND MARKING.</u></b>
16.1	The following shall be marked on builder's plate fitted on inner side of the transom starboard side. BOAT GENERAL PURPOSE INFLATABLE NO.: - DATE OF SUPPLY: - NAME OF MANUFACTURER : - MAX LOAD CARRYING CAPACITY (KG): - MAX MOTOR RATING (KW): - MAX NO. OF PERSONS: - RECOMMENDED WORKING PRESSURE -
16.2	The following parts shall have the identification of the craft permanently marked on them:- Bottom boards - Stencil marking to be made Oars - -do- Storage bags - -do- Valises - -do-
16.3	The stenciling is to be in black ink, waterproof and of a quality non-injurious to the proofed fabric.
17	<b><u>PACKING INSTRUCTION</u></b>
	The unit shall be suitably packed to withstand the hazards of rail / road transit and with a view to avoid any damage during transit and safe arrival at consignee's address.
18	<b><u>INSPECTION TEST AND TRIALS FOR PROTOTYPE CRAFT.</u></b>
	<b><u>Physical and Chemical Tests</u></b>
18.1	Fabric and cordages are to be of approved type. If considered necessary, following physical and chemical tests on samples of various types of fabrics, cordages shall be carried out by Classification Society in order to ensure that these conform to the required designed specifications.
18.2	Prior to starting manufacture, the manufacturer shall submit samples of the fabric to the Inspecting Officer as follows: Buoyancy Fabric - 1 Meter long full width Floor Fabric - -do-
18.3	The testing of fabric shall be arranged at appropriate NABL approved laboratories in presence of IRS (Indian Register of Shipping) Surveyor.
	<b><u>Cordages</u></b>
18.4	Test certificates in respect of these items issued by an independent testing authority, where possible or by the manufacturer may be accepted. In case of doubt the purchaser's Inspector may draw samples for testing at the approved Laboratories.
	<b><u>Dimensions</u></b>
18.5	The dimensions of the craft shall be measured with the craft inflated and completely rigged.

18.6	The diameter of the buoyancy chambers shall be taken at 3 points along each parallel side. The width shall be measured at the transom and at a point midship. The internal lengths shall be measured between a pump line from inner one of the buoyancy tube to the bottom end of transom along the floorboards.
	<b><u>Air Inflation Tests</u></b>
18.7	The under mentioned tests shall be carried out of the craft when completed with all fittings. During the tests draughts shall be guarded against and the temperature shall be kept as constant as possible throughout the test.
18.7.1	For every 1° Centigrade (1 degree Fahrenheit) rise above the temperature at commencement of the test, 0.004 bar (0.058 PSI or 1.5 inch of water) is subtracted from the final pressure reading and for every 1° Centigrade (1 degree Fahrenheit) fall in temperature 0.004 bar (0.058 PSI) shall be added to the final pressure reading. If the temperature variation during the period of the test is greater than 3.0° C the test is invalid and a further test shall be made under more constant temperature conditions. Accurate thermometer readings shall be taken.
	<b><u>Inflation Test</u></b>
	<b><u>Preliminary Inflation Tests</u></b>
18.8	The whole of the buoyancy tube shall be inflated 1.2 times of nominal pressure defined by manufacturer (but min. 2 PSI (55 inches of water) to pre-stretch the boat and left for 30 minutes. The pressure at the end of this test shall not be noted, but craft examined for undue stretch or distortion.
	<b><u>Air tightness Pressure Test</u></b>
18.9	The whole of the buoyancy tube shall be inflated to nominal pressure defined by manufacturer (but min. 0.14 kg/cm <sup>2</sup> or 2 PSI) and left for 24 hrs., the pressure drop after correction for temp. change shall not be greater than 20% in any compartment.
	<b><u>Bulkhead/Overpressure Test</u></b>
18.10	Each Chamber of the buoyancy tube shall to be inflated to 1.5 times of nominal pressure defined by manufacturer (but min. 3 PSI) with all other chambers remaining deflated and left for 30 minutes. No damage or rupture shall occur. Fall in pressure corrected for change in temperature shall not to exceed 0.012 Kg/cm <sup>2</sup> or 4.5 inch of water column.
18.11	The tests stipulated in 18.12 to 18.15 below shall be carried out in calm conditions in smooth water. Service Floor Boards with additional 10 Kg weight shall be used for the tests.
	<b><u>Floatation Test</u></b>
18.12	Each craft shall be inflated and assembled complete with keelson and bottom boards. It shall be floated in water. A load of 825 Kg shall be distributed evenly over the floor boards and the craft left floating for 30 minutes. No leakage of water is to occur. Any defects found at the conclusion of this test shall be made good by the builder.
	<b><u>Free Board</u></b>
18.13	The free board of the vessel when floating fully inflated in calm water and loaded with a test load of 825 Kg. shall not be less than 1/6 <sup>th</sup> the diameter of the main buoyancy tube, forming a side of the vessel, such free board being measured at mid length of the vessel.
	<b><u>Assembly/ De-assembly</u></b>
18.14	It shall be proven that the craft can be assembled and de-assembled as per standard procedures.
	<b><u>Deflation</u></b>
18.15	Deflation tests shall be carried to prove that the craft can be successfully deflated.
	<b><u>Swamp &amp; Stability Examination</u></b>
18.16	Swamp & stability check to be carried out as per ISO 6185-3.
	<b><u>Damage Test</u></b>
18.17	The craft shall be capable of supporting 825 kgs with any two alternate compartments deflated.
	<b><u>Power Trials</u></b>
18.18	Power trials with the outboard engine (30 HP OBM) shall be conducted under various loads (light load & full load min.) along with truing circle, maneuverability trials, crash stop and performance of the boat shall be satisfactory during trials.

	<b><u>Towing Tests</u></b>	
18.19		
(a)	The boat shall be tested in the manner described below.	
(b)	Embark the maximum number of persons reckoned and position them uniformly within the seated area.	
(c)	Tow the boat by its towing point at a speed of not less than 4 knots, allowing a tow line length of 3 boat length.	
(d)	Carryout man oeuvres for not less than 15 min.	
(e)	The boat shall be closely examined at the end of the test period for any structural failure in the form of fracture, tear etc. on any part of the hull or boat component, such as deck or thwarts, and including any boundary interface such as floor/hull.	
(f)	The point of attachment of the tow line shall remain secure during the period of the test.	
(g)	Evidence of any of the referred-to structural failures shall be regarded as failure of the boat.	
	<b><u>Righting Test</u></b>	
18.20	The capsized craft shall be capable of being righted by two men with an average weight of 82.5 Kg each. For this test if two men each weighing 82.5 Kg are not available, then 3 men whose total weight does not exceed 250 kgs may be used. During this test, the craft shall be in its light condition with no engine and or other equipment fitted in the craft.	
	<b><u>Rowing test for Oars</u></b>	
18.21	It shall be proved that the craft loaded with 825 can be oar propelled. The craft shall be turned, brought alongside etc. The test shall be conducted over a distance of 300 meter in light load & full load condition of attachment to tube shall be examined for any damage.	
19	<b><u>TEST SCHEDULE FOR PRODUCTION CRAFTS.</u></b>	
19.1	Fabrics	Clause 18.2 applies
19.2	Cordages	Clause 18.4 applies
19.3	Dimensions	Clause 18.5 applies
19.4	Other Tests	Test prescribed in clauses 18.7 to 18.21 shall be carried out on all crafts except for 18.16, 18.17 & 18.20 which required only on first boat of the order unless there is no changes in stability or design data.
19.5	Minimum 20 Nos. of boats to be offered in a lot for inspection.	
20	<b><u>COMPLETION</u></b>	
20.1	The craft shall be completed in all respects to the satisfaction of the Inspector. All items of equipment to be checked. The craft shall be assembled on the shop floor and a check is to be carried out that the parts fit properly.	
20.2	On completion of all tests and examinations the hull and bottom boards, etc. shall be packed into their valises, before dispatch.	
<b>2</b>	<b><u>Out Board Motor (OBM)</u></b>	
1	<b>Scope</b>	This specification relates to the detailed technical requirements of 30 HP Four Stroke Outboard Motor (OBM) intended to be used on 4.5m Inflatable Boats of WBP DMG
2	<b>Functions</b>	The 30 HP Four Stroke Outboard Motor (OBM) is intended to be used on 4.5m Inflatable Boats, which shall perform the following tasks
i)	Search & Rescue during floods	
ii)	Transport men and material	
3	<b>Requirements</b>	
3.1	The make & model of OBM shall be of reputed make. OBM make should have indigenous product support throughout India	

3.2	OBM shall be compatible (throttle response throughout its speed range, shaft length, propeller etc.) with 4.5m Inflatable Boats of SDRF and can be quickly attached to boat whenever required	
3.3	The Outboard motor shall be of four strokes, three cylinders in-line gasoline engine with suitable propeller	
3.4	The OBM should be capable of developing 30 HP	
3.5	The OBM shall have electronic fuel injection system.	
3.6	The engine cooling system shall be water cooled with thermostat	
3.7	The OBM shall be provided with tiller handle for steering	
3.8	The OBM shall be provided with manual trim & tilt	
3.9	The exhaust shall be through propeller	
3.10	The lubrication system shall be wet sump	
3.11	The OBM shall be ultra-low emission ratings	
3.12	The length of the shaft of OBM shall be compatible with transom height of 4.5m Inflatable Boats of SDRF (Long shaft).	
3.13	The engine and drive line shall be fitted in enclosed housing to protect from water.	
3.14	OBM shall be manual starting capability.	
3.15	OBM shall have forward, neutral & reverse gear shifting arrangement.	
3.16	The OBM shall be provided with OEM supplied standard fuel tank along with suitable accessories such as connecting fuel hoses, male & female adopter.	
3.17	OBM shall be provided with owner's manual & service manual and 1 Year warranty Certificate.	
3.18	OEM recommended standard spares are to be provided.	
	On-board spares (OBS)	
3.18.1	Engine oil filter	03 nos.
3.18.2	Fuel Filter	06 nos.
3.18.3	Air Filter	02 nos.
3.18.4	Fuel line with priming valve and connectors	01 No
3.18.5	Propeller	01 No.
3.18.6	Spark plug	03 Nos.
3.18.7	Spark plug wrench	01 No
3.18.8	Water pump repair kit	01 set
3.18.9	Water pump impeller	01 No.
3.18.10	Gear oil drawn screw washer	06 nos.
3.18.11	Lubrication oil drain plug washer	02 nos.
3.18.12	Fuses of all system complete	02 set.
3.19	OEM Shall be provided with suitable storage stand.	
3.20	Dry weight of the OBM shall not be more than 60 Kgs.	
4	<b>Inspection :-</b>	
4.1	The inspection authority for the Outboard Motors will be DMG WB.	
4.2	The cost of conducting tests including POL and the material required for the purpose are to be borne by the firm	
5	<b>Packing instruction :-</b>	
5.1	The unit shall be suitably packed to withstand the hazards of rail / road transit and with a view to avoid any damage during transit and safe arrival at consignee's address.	
6	<b>Test &amp; Trials :-</b>	
6.1	Verification of OEM documents/certificate w.r.t. to engine model, sr. no., capacity, product description, emission rating etc. including owner's manual & service manual	
6.2	Visual examination of each OBM.	
6.3	Installation of OBM on SDRF supplied boat.	
a)	OBM should be capable of quickly attached to the boat.	
b)	Shaft length of the OBM should be compatible with the transom height of boat	
6.4	Water trials of SDRF boats along with each new OBM covering:-	

	a) Endurance trial on full load for one hour of one OBM in each lot being offered for survey.	
	b) Performance of each OBM at light & full load.	
	c) Maneuvering trial with each OBM	
	d) Turing circle of with each OBM	
	e) Astern Trial of with each OBM	
	f) Verification of trim & tilt arrangement of each OBM.	
6.5	Verification of accessories & OBS of each OBM.	
<b>3</b>	<b><u>LIFE JACKET :</u></b>	
1	IRS (Indian Register of Shipping) approved.	
2	High- Visibility Orange colour fabric cover.	
3	Adjustable buckle for tightening and specially designed with Velcro fitment for easy/quick donning in an emergency (Three strap).	
4	Special construction of the jacket allows the wearer quick turning in case of being knocked unconscious in water.	
5	Chemically resistant to sea water and petroleum products.	
6	Retro-reflective tape solas approved.	
7	Inner foam	Soft Polyethylene.
8	Size	(54+18) x 56cms.
9	Floatability	90 Kg ±Kg
10	Accessory	Whistle.
11	Shelf life	05 years.
12	Colour	Orange.
13	Approvals: Life jacket should be IRS (Indian Register of Shipping) approved and stamped, confirming to SOLAS 74 as amended Reg III/4,III/7,III/34,X/3, 1994 & 2000HSC codes VIII/8. 1 LSA code Reg I/1.2 and II/2.1.1 IMO Resolution MSC .81 (70) part 1, MSC 200 (80), MSC 218 (82)< MSC 201(81) and MSC 207 (81)	
<b>4</b>	<b><u>DIVING SUITS (FULL SLEEVE) :</u></b>	
(a)	One-piece Neoprene 3 mm without hood	
(b)	Lycra collar for more comfort with magnetic lock	
(c)	Wrist in glide skin neoprene for easier dressing.	
(d)	Zips at the wrist and ankles for easy wearing preferred.	
(e)	Back Heavy duty #10 Zip with water shield	
(f)	Black color	
(g)	Super-stretch neoprene on shoulders, sleeves and armpits.	
(h)	All seams glued and blind stitching	
(i)	Pre-bent anatomic legs and arms.	
(j)	Embossed knee pad with additional protection.	
(k)	O-ring seals to finish the sleeves and limit water ingress	
<b>5</b>	<b><u>DIVING / HAND GLOVES:</u></b>	
(a)	Gloves should be 3-6 mm thick	
(b)	Should prevent contact with water	
(c)	Palm of the gloves made up of anti-slipped finish.	
(d)	The gloves should be suitable for divers up to a depth of 40 mtrs	
(e)	Ergonomic pre-curved fingers and ribbed glove-back work together to eliminate hand fatigue	
(f)	Wrist cinch closure to minimize water exchange and heat loss	
(g)	Standard neoprene with glued and blind-stitched seams, along with elastic wrist closures to minimizes water exchange and keeps the cold out.	

<b>6</b>	<b><u>DIVING / SWIMMING SHOE / BOOTS (PAIR) :</u></b>
	(a) Anatomically correct shaped foot bed and outsole.
	(b) Asymmetric toe, instep, and heel cap for added protection & durability.
	(c) Hook & loop zipper lock to keep zipper in place.
	(d) Standard neoprene upper with exterior thickness markings.
	(e) Flexible vulcanized rubber outsole.
	(f) For seam (2 front, 2 hell) pattern.
	(g) Non-corrosive YKK#10 heavy-duty zipper.
<b>7</b>	<b><u>WEIGHTS AND WEIGHT BELT:</u></b>
(a)	Lead weight of 1 Kg & 2 kg (4 Nos each) for divers to adjust buoyancy during diving operation
(b)	Waist belt should be made of polypropylene/ nylon fabric provided with quick release non-breakable buckle of fiber / non corrosive soft metal. The Belt should be adjustable size as per user requirement.
(c)	The belt should be adjustable for 30 inch to 45 inch in length
(d)	Thickness 3mm approx., width of the belt 2 inch.
(e)	Colour black,
(f)	Weight – 02 Nos lead weight of 1 kg & 2 kg each to be provided with the belt should 04 pocket make of similar material and pock flab should be provided with Velcro / quick fix bottom to close pocket.
<b>8</b>	<b><u>HALF FACE MASK:</u></b>
	(a) Half double –dome mask
	(b) The half mask covers the eyes and nose.
	(c) Masks may have a single, durable, tempered glass faceplate in front of the eyes.
	(d) Mask may be supported by a relatively rigid plastic or metal frame, or they may be permanently bonded to the rim if the skirt, in a construction known as “frameless”.
	(e) “Skirt” of synthetic rubber or silicone elastomer to support the frame and lenses and create a watertight seal with the diver’s face.
	(f) The skirt material may be almost transparent, translucent or opaque.
	(g) Mask may be fitted elastomer strap of similar material to the skirt.

## **9. UNDER WATER BA SET.**

**ROLE :** Self Contained under Water Breathing Apparatus (**SCUBA**) is to be used to conduct underwater search and recovery operation. The Complete set of the equipment should enable divers to conduct operation in cold or contaminated water.

**GENERAL :** The apparatus should be rugged, light weight and suitable for single person use. The equipment should be certified for a maximum operating depth of 50metres.

### **THE SET SHOULD BE PROVIDED WITH FOLLOWING ITEMS AS Breathing Apparatus with Compressed air cylinder including**

- (i) Full face Mask
- (ii) Half face Mask
- (iii) Regulator Unit
- (iv) Buoyancy compensating device.
- (v) Main Cylinder.
- (vi) Breathing Demand Valve

- (vii) Octopus
- (viii) Wet Suit Gloves, Socks, & Boots
- (ix) SMB – Surface Marker Buoy
- (x) "Divers Below" Surface Float (Red & Orange)
- (xi) Weight Belts with weight.
- (xii) Dive Fins.
- (i) Life Line Rope.
- (ii) Diver's Knife.

## **BREATHING APPARATUS WITH COMPRESSED AIR CYLINDER INCLUDING**

### **(i) FULL FACE MASK WITH BREATHING DEMAND VALVE :**

The Mask should have a built-in mechanism to resist ingress of water and drain any accidental water entry into the mask without human intervention (Positive or semi-positive pressure preferred), so as not to allow any water retention in the mask

Customizable nose block for equalization:

- (a) Low profile with excellent field of view
- (b) Weight to be restricted to 1200 grams.
- (c) The visor will be made of scratch & impact resistant transparent polycarbonate with wide visual field.
- (d) The mask shall have 3-5 strap attachment points secured to the skirt all which allow pressure to be applied throughout the diver's face.
- (e) The skirt of the mask should have a double-seal made of high grade liquid silicone to give the diver (2) two face sealing surfaces enabling 1 size mask to fit nearly all facial types.
- (f) Upon inhalation, divers Air should circulate over the lens, thus minimize fogging of the lens and reduce the amount of CO and CO<sub>2</sub> built up in the inhaled air.
- (g) The face mask will be equipped with a Ambient Breathing Surface Valve to breathe fresh air when on surface and save precious tank air. It should be equipped with a one -way check valve that prevents water entry is surface valve is not closed by the diver.
- (h) Face mask will also have provision to connect communication system or Video Camera or Torch when required.
- (i) The face mask will be supplied complete with an INTEGRATED balanced second stage REGULATOR that has a quick release button, for easy setup and disassembly, which is accessible from the inside of the mask and can be connected to the 1st stage via a breather hose.
- (j) Must have right hand-oriented LP Hose connection and LP hose must be included.
- (k) The regulator design must maintain a separate inhalation and exhalation pathway to ensure air delivery pathways are not intermingled.
- (l) Must be certified to EN250 standard.

### **(ii) HALF FACE MASK:**

- (a) Half double -dome mask
- (b) The half mask covers the eyes and nose.
- (c) Masks may have a single, durable, tempered glass faceplate in front of the eyes.
- (d) Mask may be supported by a relatively rigid plastic or metal frame, or they may be permanently bonded to the rim of the skirt, in a construction known as "frameless".
- (e) "Skirt" of synthetic rubber or silicone elastomer to support the frame and lenses and create a watertight seal with the diver's face.



- (f) The skirt material may be almost transparent, translucent or opaque.
- (g) Mask may be fitted elastomer strap of similar material to the skirt.

**(iii) REGULATORS:**

An over-balanced first stage and a pneumatically balanced second stage with cold water and murky water capability (can be used in all temperatures including those below 10 C/ 50 F and is environmentally sealed) which should have been tested for military and/or professional applications. (*Certificate from international users or manufacturers certificate naming international military/fire/disaster response forces using their equipment*)

- (a) The first stage should have environmental dry seal to keep water out of the mainspring chamber to prevent ice buildup and keep silt and contamination out.
- (b) Compatible with EAN40 out of the box
- (c) 2 HP ports and 4 MP ports should be available
- (d) DIN System of first stage attachment to tank
- (e) Pneumatically balanced second stage with a heat exchanger
- (f) Comfortable mouthpiece to eliminate jaw-fatigue.

**(iv) BUOYANCY COMPENSATING DEVICE:**

- (a) A wrap-around jacket
- (b) Tough Fade resistant Cordura 1000 with advanced anti-abrasion and anti-fade material to hold up to the rigors of salt and chlorine/
- (c) Adjustable cummerbund
- (d) Built in low pressure inflator hose to connect with regulator first stage
- (e) Low profile flat inflating/deflating dump valves to prevent accidental damage and reduce drag underwater.
- (f) It should have at least 2 dump valves in addition to the inflator hose
- (g) Built-in weight system to make task of divers easy without weight built
- (h) Weight trims on the tank band
- (i) Mechanical Easy Weight Release System – provides a safe, single-pull release. Inserting weight should be a simple insert and “click”. Weights should be secure in the BCD. Once engaged, the only way to release the weight is to pull on the handle
- (j) Backpack to include built in carrying handle and a traction pad to reduce tank slippage
- (k) The large, easy-to-access, utility pockets found on either side, should have two-way zippers with zipper pulls. There is an attachment loop inside the left pocket
- (l) The waistband is adjustable in the back to accommodate a wide range of waist sizes
- (n) A scooped octo-pocket on the top, front of the right lobe for easy stowage and deployment of an octopus. The octopus remains visible and accessible throughout the dive
- (o) A positioning strap to allow setting the BCD at your preferred height each time
- (p) Knife attachment points to give easy access to the knife
- (q) Should have 5 stainless steel D-rings for attaching accessories
- (r) Adjustable chest strap for personal comfort

**(v) MAIN CYLINDER:**

- (a) A 10-11 Ltrs. Alloy aluminum / alloy Steel or equivalent alloy cylinder
- (b) Should have a minimum capacity of 2000 liters, charging pressure 300 Bar.

- (d) Should have a weight of not more than 18 kgs with the valve
- (e) Should have a life of at least 20 years
- (f) Should be certified by Indian Explosives Department or PESO

**(vi) BREATHING DEMAD VALVE**

**(vii) OCTOPUS:**

The set should include an additional second Stage with hose for use in emergency in case of air supply to face mask fails or for use by buddy diver or for any person being rescued. It will connect to the regulator first stage. Along with the octopus, a single or twin lens Half Face Mask will be supplied having integrated buckles and silicon skirt.

**(viii) WET SUIT WITH GLOVES, SOCKS & BOOTS:**

- (a) One-piece Neoprene 3 mm without hood
- (b) Lycra collar for more comfort with magnetic lock
- (c) Wrist in glide skin neoprene for easier dressing.
- (d) Zips at the wrist and ankles for easy wearing preferred.
- (e) Back Heavy duty #10 Zip with water shield
- (f) Black color
- (g) Super-stretch neoprene on shoulders, sleeves and armpits.
- (h) All seams glued and blind stitching
- (i) Pre-bent anatomic legs and arms.
- (j) Embossed knee pad with additional protection.
- (k) O-ring seals to finish the sleeves and limit water ingress

**GLOVES:**

- (a) Gloves should be 3-6 mm thick
- (b) Should prevent contact with water
- (c) Palm of the gloves made up of anti-slipped finish.
- (d) The gloves should be suitable for divers up to a depth of 40 mtrs
- (e)** Ergonomic pre-curved fingers and ribbed glove-back work together to eliminate hand fatigue
- (f) Wrist cinch closure to minimize water exchange and heat loss
- (g) Standard neoprene with glued and blind-stitched seams, along with elastic wrist closures to minimize water exchange and keeps the cold out.

**SOCKS :**

- (a) The socks should be in conjunction with above mentioned suit
- (b) Should be made of neoprene of 3 mm thickness
- (c) It should have non slippery sole, which reduces wear and prevents slipping on

wet or

oily surfaces

**BOOTS :**

- (a) Anatomically correct shaped foot bed and outsole.
- (b) Asymmetric toe, instep, and heel cap for added protection & durability.
- (c) Hook & loop zipper lock to keep zipper in place.
- (d) Standard neoprene upper with exterior thickness markings.
- (e) Flexible vulcanized rubber outsole.
- (f) For seam (2 front, 2 hell) pattern.
- (g) Non-corrosive YKK#10 heavy-duty zipper.

**(ix) SMB – SURFACE MARKER BUOYS FOR DIVERS (DSMB) :**

A surface marker buoy (SMB) is an invaluable tool for any diver. An SMB shows boats that there are divers in the water and helps your own boat spot you as you ascend from a dive. Divers also use SMBs to note their position

during a drift dive.

- (a) Closed or Open DSMBs/
- (b) Should have a valve to fill them orally or through Low Pressure Inflator Hose or through Octopus
- (c) Should have an underwater finger spool with 15 metre basic nylon line.
- (d) Should have a height of at least 3 feet.
- (e) Should be red or orange or yellow.
- (f) Shaped like a long sausage
- (g) Should come with its own pouch attachable to a BCD D-ring

**(x) "DIVERS BELOW" ALERT MARKER BUOY**

- (a) Orange and Round surface Marker buoy with removable flag.
- (b) Horizontal flag mount and inflatable round buoy base
- (c) Large buoy base preferred, with weight attachment strap
- (d) Should have all other characteristics of the DSMB
- (e) Should have towline attachment ring and weight clip strap
- (f) Deflated it should fit into the dive bag.

**(xi) WEIGHTS AND WEIGHT BELT:**

- (a) Lead weight of 1 Kg & 2 kg (4 Nos each) for divers to adjust buoyancy during diving operation
- (b) Waist belt should be made of polypropylene/ nylon fabric provided with quick release non- breakable buckle of fiber / non corrosive soft metal. The Belt should be adjustable size as per user requirement.
- (c) The belt should be adjustable for 30 inch to 45 inch in length
- (d) Thickness 3mm approx., width of the belt 2 inch.
- (e) Colour black,
- (f) Weight – 02 Nos lead weight of 1 kg & 2 kg each to be provided with the belt should 04 pocket make of similar material and pock flab should be provided with Velcro / quick fix bottom to close pocket.

**(xii) FINS:**

A rugged thermoplastic rubber fin featuring an big foot pocket to accommodate boots and a spring strap for easy donning and doffing. The design should be standard gear issue fin for military, special ops, coast guard and public safety divers.

**(xiii) DIVER'S KNIFE**

Diver's knife must be cut obstruction, ropes, nets etc. underwater.

- (a) A metallic portable sharp knife with a handle.
- (b) Material – Titanium / Non-corrosive.
- (c) Shape of the Blade – Razor sharp smooth cutting edge on one side with considerable balley or curve and should include a sharp line – cutter hook for cutting fishing lines and leaders. The backbone of the blade to have a heavy serrated edge (wavy or rounded serrations) running nearly the full length of one side to function as a saw.
- (d) Knife Tip – Ponted and made of titanium.
- (e) Handle – The size of the handle should be about 110-120 mm in length with reasonable width so that a diver can hold the knife comfortably in water. The material used for handle should be black material externally and rubber / polypropylene internal with non-skid surface. There should be

an effective guard / ridge / thumb rest between the handle and the blade to prevent fingers from slipping onto the sharp edge. There should be one lanyard hole at the top end of the handle with a brass metal eye (round edges) to secure the knife with a lanyard / rope.

(f) Weight Approx. 200 – 300 grm.

(g) Length Blade not less than 6 Inches.

### **Sheath of Knife:-**

Safety covers for knife and for attachment of the knife to the divers life Belt.

(a) To be supplied with the swimming knife with locking and quick release facility. The shape and size of the sheath should be so designed that knife blade settles firmly when inserted in to the sheath without any blade part projecting out.

(b) Material – Thermoplastic rubber / flexible nylon with the inside part of the sheath made of hard plastic that does not get cut / damaged when inserting the knife inside.

(c) Colour – Black

(d) The sheath should have a simple and maintenance free locking mechanism so that when the knife is returned to the sheath, it should engage with a clearly heard or felt click.

The knife release should be operable by one finger of the hand

(e) The sheath should have slots for attaching it to a 2 Inch broad life belt.

(f) Lanyard – A Lanyard of suitable size of 3 ft length for securing the knife to the sheath to the belt. In addition a wrist lanyard of one foot with securing band should be provided.

(g) Hose Clip – A hose clip to be provided with the knife sheath to secure the same onto the hose of diving set or buoyancy compensator device.

## **10. SURFACE BREATHING SYSTEM**

- Duration of use – 4hr according to EN 145 and NIOSH
- Flame Engulfment Report to be provided.
- Weight, ready for use(kg/pound) – 15.5kg / 34.17 pound (incl. mask, full oxygen cylinder (aluminum), CO<sub>2</sub> absorber and approx. 1.2 kg / 2.65-pound cooling ice)
- Dimensions (H x W x D) (mm/inch) – 595 x 450 x 185 mm / 23.43 x 17.72 x 7.28 inches
- Constant oxygen metering (l/min O<sub>2</sub>) – 1.5 to 1.9
- Minimum valve (l/min O<sub>2</sub>) - >80
- Breathing bag volume(l) – 5.5
- Bypass valve (l/min) - >50
- Approvals – EN 145/IS, Ex protection according to EN 50020
- High pressure, European approval with CE mark
- High pressure, European approval with CE and M24 x 2 Connecting thread
- High pressure, NIOSH/EN/IS

- Full face mask with central connecting for closed circuit breathing apparatus
- Full face mask with plug-in connection, polycarbonate visor and wiper for closed circuit breathing apparatus. Approved for mining and fire departments, tested for EN 136 with CE mark.
- Receiver with ear cup and microphone required
- Upgrade Kit low warning feature also required
- To achieve the highest level of Spare Support, Warranty and Service support, the OEM or its 100% subsidiary shall be directly registered in India. Registration Certificate to be mandatorily uploaded by bidder during bidding.

Tender Specific OEM Authorization to be uploaded during bidding.

### **11. FULL FACE MASK WITH BREATHING DEMAND VALVE :**

The Mask should have a built-in mechanism to resist ingress of water and drain any accidental water entry into the mask without human intervention (Positive or semi-positive pressure preferred), so as not to allow any water retention in the mask

Customizable nose block for equalization:

- (a) Low profile with excellent field of view
- (b) Weight to be restricted to 1200 grams.
- (c) The visor will be made of scratch & impact resistant transparent polycarbonate with wide visual field.
- (d) The mask shall have 3-5 strap attachment points secured to the skirt all which allow pressure to be applied throughout the diver's face.
- (e) The skirt of the mask should have a double-seal made of high-grade liquid silicone to give the diver (2) two face sealing surfaces enabling 1 size mask to fit nearly all facial types.
- (f) Upon inhalation, divers Air should circulate over the lens, thus minimize fogging of the lens and reduce the amount of CO and CO<sub>2</sub> built up in the inhaled air.
- (g) The face mask will be equipped with a Ambient Breathing Surface Valve to breathe fresh air when on surface and save precious tank air. It should be equipped with a one -way check valve that prevents water entry is surface valve is not closed by the diver.
- (h) Face mask will also have provision to connect communication system or Video Camera or Torch when required.
- (i) The face mask will be supplied complete with an INTEGRATED balanced second stage REGULATOR that has a quick release button, for easy setup and disassembly, which is accessible from the inside of the mask and can be connected to the 1st stage via a breather hose.
- (j) Must have right hand-oriented LP Hose connection and LP hose must be included.
- (k) The regulator design must maintain a separate inhalation and exhalation pathway to ensure air delivery pathways are not intermingled.
- (l) Must be certified to EN250 standard.

### **12. FINS:**

A rugged thermoplastic rubber fin featuring an big foot pocket to accommodate boots and a spring strap for easy donning and doffing. The design should be standard gear issue fin for military, special ops, coast guard and public safety divers.

### 13. UNDER WATER SEARCH CAMERA (STILL):-

- (a) **ROLE :-** For use during diving operations for high quality underwater image recording.
- (b) **MAIN COMPONENTS OF VIDEO CAMERA :-** The Video System being offered should have following component:-
- (i) Under water colour Video camera.
  - (ii) Surface Camera Control unit with video colour monitor
  - (iii) LEDs
  - (iv) Camera Mounting Brackets
  - (i) Umbilical
  - (ii) Digital Video recorder
  - (iii) Tool Kit
- (c) (a) Video camera should work up to depth of 10 meters in water. (
- (b) Weight of the Video Camera (excluding surface unit) should not be more than 700 gms.
- (c) Umbilical- Outer covering of umbilical should be abrasion resistant. (
- (d) Length of the Umbilical should not be less than 50 meters. (
- (e) Cable should rugged, neutrally
- (d) **GENERAL SPECIFICATIONS/ CHARACTERISTICS: -**
- (i) The video system should have built in digital video recording system,
  - (ii) The system should have in built power back up for at least 1 hour.
- (e) **Temperature Range :-** The Video Camera should operate between temperature ranges of 40<sup>0</sup> - 50<sup>0</sup>C.
- (a) **DOCUMENTATION: -** Operational and technical manual should be supplied with the equipment.

### 14. BA Set

- The set shall be self-contained open circuit type compressed air breathing Apparatus set fully confirming to EN 137:2006 (type-2) as per the latest PPE regulation 2016/425.
- The Set shall be supplied with Digital Pressure Gauge with an Inbuilt Motion sensor
- All vital parts of the SCBA like Back Plate, Facemask, Lung Demand Valve, Cylinder, Digital Pressure Gauge should be clearly mentioned in the EN 137 Type 2 Certificate.
- The Testing of EN 137 Type 2 should be from a reputed Lab having testing of SCBA in their scope of work.
- Vital parts of the SCBA like, Back plate, Facemask, Lung Demand valve, Digital Pressure Gauge and Cylinder, for highest level of safety and integration should be from the same OEM. Bidder needs to mandatorily submit OEM declaration during bidding.
- Cylinder should be PESO Certified and must have a minimum Life of 20 years. Bidder

needs to mandatorily submit OEM declaration of 20 years cylinder life during bidding.

- Digital Pressure Gauge must have ATEX / PESO Certificate and in the name of OEM.
- Weight: The weight of the ready to use set shall not exceed 13.00 kg.
- Face mask: Full Facemask shall be approved to EN 136 class 3.
- Air cylinder: The Carbon Composite cylinder shall have a minimum water capacity of 6.8 liters and free air capacity of min 2040 liters when filled at a pressure of 300 bars.
- Valve to be in line type & 33complied in accordance to EN 144.
- To achieve the highest level of Spare Support, Warranty and Service support, the OEM or its 100% subsidiary shall be directly registered in India. Registration Certificate to be mandatorily uploaded by bidder during bidding.

Tender specific OEM authorization to be uploaded during bidding

**15. FOOT PUMPER:** - Heavy duty bellow type foot pump (reputed make) of suitable design shall be provided to inflate the craft in approximately 20 minutes. The housing of pump is to be made of a heavy duty yet light weight marine composite. The Bellow to be made of coated reinforced fabric and all metal parts should be of stainless steel.

## **16. Life Buoy:-**

### **GENERAL**

It should be useful in Deep Sea, in case of Flood, Safety measures for sea vessels & sea Mishap. It should be totally moisture proof and non-inflammable.

### **SPECIFICATION**

It should be manufactured from durable High visibility orange synthetic material, which requires no maintenance. The Retro reflective Tape used should be Solas approved, which helps to identity victims in distress. Its inner diameter should be at least 45 Cms, and outer diameter should be at least 70 cms. Having width: at least 10 cms. Floatability: more than 17 Kgs.

### **TESTING :**

It should be prototype Tested i.e. Flotation Test, Strength Test.

It should be 24 hrs water Immersion tested.

Weight: 2.3 Kg to 3.5 Kgs.

Weight Test: 50 Kg.

## **17. Diver Safety HARNESS**

Comfortable & adj. harness with frame construction, pre threaded double back buckles, high strength nylon webbing, woven polyester wicking mesh, weight less than 510 Gms Approved as per CE,EN 12277 type C/UIAA 105.

## **18. Knife:-**

- Hole for attaching the knife to the harness with a carabiner.
- Two ways to open the blade: with the notch in the blade if bare handed, or with the textured wheel when wearing gloves.
- Mechanism for locking the blade in the open position

- Materials: stainless steel, nylon
- Weight: Less than 50gm

### **19. Single Air Cylinder:-**

- Size of Cylinder between 10 to 12L
- Filling pressure between 200 and 300 bar
- Minimum Air Volume when charged 2000 Its
- Alloy Aluminum Material
- PESO , Govt. Of India, Approved Cylinder
- Fitted with Reserve air Valve

### **20. SINKER (20 KG)**

1. Denominations : Each Hexagonal iron weight shall have 20 Kilogram denominations.
2. Shape : Oval / round / square / Polygonal .
  - (a) The weights shall be integral and hexagonal. The shape shall be as shown in Figures 6A below.
  - (b) The weights shall be provided with cast in handles made of mild steel.
3. Material : The weights shall be made or manufactured from grey cast Iron. Cast Iron weights may preferably be made from material conforming to grade FG 150 of IS 210.
4. Method of manufacture : The weights shall be made or manufactured by means of any suitable foundry and moulding process.

Loading hole : The weights must have a loading hole formed at the foundry.

### **21. Electric Extension Cord**

Specification same as Sl. No. 12 of CSSR Equipment.

### **22. Rope Nylon**

Specification same as Sl. No. 11 of CSSR Equipment.

### **23. Air Compressor Machine:-**

It should be a High Pressure Breathing Air Compressor as under:

- CE Marked/Certified
  - FAD of 300Imp(+/-5%)
  - Working pressure of 300 bar & 200 bar
  - Prime Mover 5.5 kwh 3ph 400 V 50 Hz Motor
  - Discharge Filter Activated Carbon, Molecular sieve for Air Quality as per EN12021Standard
  - Two Hoses, each 1.2m long, supplied with filling adopters- one for 300 bar and one for 200 bar with safety valve for both pressures
  - Frame Made of Powder Coated steel with carrying handles
- Weight of compressor within 135kg

### **24. BLOWER:-**

- i) Air Volume: 2.5 - 3 m<sup>3</sup>/min
- ii) Cord Length: 2 m -3 m
- iii) Material Type: Plastic
- iv) No Load Speed: 15000 - 17000 RPM
- v) Power Consumption: 400 - 500 W
- vi) Voltage: 230 V.



## **(IV) MOUNTAINEERING & HIGH RISE BUILDING EQUIPMENT**

### **1, Ascender:-**

1. Weight should not be more than 198 grams
2. Should be made of aluminum alloy
3. Design Should have facility of Accommodating 8mm to 13 mm ropes.
4. Should have opening system protection on back side to prevent accident openings.
5. Efficient and easy to use
6. Should be CE, EN & UIAA certified.

### **2. Descender:-**

Self-braking belay device Made of aluminum side plates, stainless steel cam and friction plate, reinforced nylon lever arm for use with single rope between 10 and 11 mm.

### **3. Mitton Gloves:-**

- Made up of Heavy-duty CANVAS
- Palm and thumb with double layered Canvas and padding
- This hand glove has ergonomic cut for high dexterity without being too tight
- Protect the palm from heat generated during long rappels or Slithering.

### **4. Pulley:-**

Fixe Pulley single groove for ropes Light weight working load 5kN Breaking load 22kN as per EN 12278, CE/ UIAA approx. weight 90gms.

### **5. Kernamantle rope(dynamic/static)**

- Specification same as Sl. No. 09 of CSSR Equipment.

### **6. Figure Eight:-**

- Material: Aluminium
- Works on ropes from 9 to 16 mm.
- Weight: Less than 50Gm

### **7. Carabiner:-**

General purpose carabineer for mountain ring as per BIS cat is 8533 : 1977 reaffirmed-2001.

### **8. Giri Giri –**

1. Should be light and compact
2. Should be suitable for 8 mm to 11 mm rope
3. Body should be made of forged Aluminum alloy
4. Should be suitable for multi pitches.
5. Should be easy to handle.
6. Should be CE, EN & UIAA certified

### **9. Full Body Harness:-**

It should be useful for safe working on Heights & protection against fall. The shoulder and thigh straps should be easily identified by two different colours. It should be fabricated for

high shock absorbing and impact dispersing capacity while working-before, during and after a fall. It should have a specially designed seat strap for optimum comfort. It should have Energy Absorbing Dorsal ID.

**SPECIFICATION:-** Its Anchor point should be by means of 2 chest attachment triangular-ring and a dorsal attachment triangular -ring. It should have adjustable shoulder and thigh straps

**ACCESSORIES**

If required it should be available with accessories like Kinetic Energy absorbers, Lanyards, Karabiners.

**10. Sit Harness (Half Body Harness):-**

Comfortable & adj. harness with frame construction, pre-threaded double back buckles, high strength nylon webbing, woven polyester wicking mesh, weight less than 510 Gms Approved as per CE, EN 12277 type C/UIAA 105.

**11. CARRYING HARNESS**

<b>Description</b>	The harness is easy to help security forces / personnel carry an injured person to safety without further aggravating their injuries.
<b>Type</b>	Carrying Harness
<b>Ideal for</b>	Man & Woman
<b>Material:</b>	Made of 500D CORDURA Mil Spec Tactical Nylon.
<b>Buckles &amp; Webbing:</b>	Mil Spec buckles and webbing
<b>Dimensions:</b>	Size-02, Waist Belt 83 to 120 Cm, Leg loops-50 to 65 Cm, Stature- 175 to 200 Cm.
<b>Weight:</b>	580-590 grams
<b>Strength:</b>	930 kg
<b>Attachment:</b>	Includes a Plate Carry Attachment kit to connect to plate carriers.
<b>Fits:</b>	Fits in any backpack.

**12. SAFETY HELMET:-**

01.	<b>ISI MARKED</b>	IS : 2925 OF 1984
02.	<b>SHELL MATERIAL</b>	High density polyethylene (Hdpe)
03.	<b>Adjustable And Detachable Head Band With Nape</b>	
04.	<b>STRAP MATERIAL</b>	Low density polyethylene (LDPE)
05.	<b>ADJUSTABLE CHIN STRAP</b>	Nylon chinstrap and Richet type head band
06.	<b>SLOT FIX DESIGN</b>	Provision for easy clip on accessories like face shields and ear muffs
07	<b>COLOUR</b>	Yellow / White

### 13. Basket Stretcher-

Technical specification of basket type rescue stretcher.

#### 1. General:

- a) Bucket type rescue stretcher should be chemical, UV, corrosion resistant and fire proof.
- b) Cell foam pad should be attached inside the stretcher for comfort of the patient.
- c) Its reliable fittings enable first-aid personnel to operate rapidly and safely
- d) Minimum three adjustable strap to secure the patient in basket.
- f) With its special sling equipment, the stretcher is ideal for lifting and transport by helicopter or crane.

#### 2. Specifications:

- a) Material of construction High density shockproof polyethylene shell with heavy duty aluminium/ steel frame.
- b). should have Horizontal and vertical lift facility.
- e) Hand holds Moulded runners and handholds on both side of the shell.
- c) Size 216(L) X 61(W) X19(H) cm +10% variation allowed.
- d) Gross weight 22 Kg approx.
- e) Load limits 200 Kg approx.
- f) Lifting harness Adjustable bridle.
- h) Fastening clamp should be steel material with adequate strength as per load limit.

### 14. ROPE LAUNCHER

- The line throwing device should be specially design to deploy a line only, or an auto inflating floatation sling and retrieval line to an otherwise inaccessible point in both land-based and maritime environments, providing an emergency response capability without putting the rescue at risk. The line thrower should be especially useful for rescues where a heavy line is required or long distances must be breached. Operational lines could be established with ease for a variety of applications including high or low angle rescue, construction projects, ship-to-ship line deployment. It should utilize air-thrust launcher technology and should be non-pyrotechnic, reusable and refillable. Launcher housing should be injection molded from polycarbonate for durability and high impact resistance. Should have two manual backup systems on the auto-inflating sling to assure fail-safe inflation. As a water rescue device, it should deliver an auto inflating flotation sling and retrieval line to a victim in water. Inbuilt safety feature: The safety mechanism on the launcher should be remain always on, resetting automatically when a projectile inserted. The projectile's "push-click" engagement should be allowing easy reloading. A pressure relief burst disk should be prevent unsafe pressure build-up that could result from exposure to extreme heat.
- A folding stock is standard for greater accuracy of deployment and should be serve as a convenient carry handle in the collapsed position.
- **Distance should be covered by accessories: -**

Sl. No.	Description	Line Projectile	Sling Projectile	Grappling Hook
01.	Spectra (Rope)-3 mm	94 meters	50 meters	40 meters
02.	Spectra (Rope)-8 mm	50 meters		

#### ➤ Accessories:

- Round Spectra: 3 mm- 150 m
- Round Spectra: 8 mm- 100 m
- Line Projectile: 2 nos.
- Sling Projectile: 2 nos.
- Grappling Hook: 1 no.
- CO2 cylinder: 4 nos.
- Trigger: 4 nos.

Tender Specific OEM Authorization to be uploaded during bidding

**Section-B**  
**Terms & conditions**

**Approximate requirements of equipments are furnished below: -**

SI NO.	Name of Items	Quantity (Indicative)	Remarks
<b>(I) CSSR EQUIPMENT</b>			
1	Bullet Chain Saw	94	Samples (if required) must be demonstrated at WBPD, Bhabani Bhawan at specified date & time (to be notified later).
2	Diamond Chain Saw	31	
3	Rotary Rescue Saw	34	
4	Battery Operating Chain Saw	49	
5	5.5 KVA Generator Set	36	
6	Inflatable Lighting Tower	39	
7	Chipping Hammer	43	
8	Come Along 1.5 Tons	8	
9	Rope kernmantle India	31	
10	Rope Manila 10 mm (100 mtrs long)	70	
11	Rope Nylon 15mm (100 mtr long)	34	
12	Extension Cord 8mm dia 100 Mtrs. Long	82	
13	Face Shield	50	
14	Safety Goggles	100	
15	Reflective Jacket	150	
16	Heavy Duty Work Gloves	100	
17	Traffic Cone	50	
18	Scene Tape Roll 100 Mtrs	10	
19	Emergency Rescue Stretcher	18	
20	Fire Axe	49	
21	Bolt Cutter 30"	62	
22	Axe	122	
23	Sledge Hammer 7kg	10	
24	Kerosene Oil Heater	10	
25	Thermal Imaging Camera	4	
26	Satellite Phone	4	
27	Rope Ladder (40'-50')	35	
28	Rotary Hammer Drill	33	
29	Hammer 04 Kg	33	

30	Telescopic Pole Pruner	28	Samples (if required) must be demonstrated at WBPB, Bhabani Bhawan at specified date & time (to be notified later).
31	Reciprocating Saw	10	
32	Ladder	21	
33	Dragon Light	70	
34	Loud Hailer/Megaphone	49	
35	FRP industrial Helmet	245	
36	Dust Mask	200	
37	Full Body Harness	42	
38	Raincoat	315	
39	Hard Toe Boot	105	
40	Gum Boot	105	
41	Pry bar	42	
42	Tin snipe	42	
43	Kodal	42	
44	Belcha	42	
45	Daw	63	
46	Hacksaw	21	
47	Tarpauline	70	
48	Manpack	10	
<b>(II) MFR EQUIPMENT</b>			
1	Glass Eye protection	50	
2	Latex Gloves	1000	
3	Thermometer Digital	53	
4	Manual Suction Unit	04	
5	B P Apparatus Digital	15	
6	Pneumatic Splints Set (sets)	106	
7	Roll Bandage (15 cm & 10 cm)	179	
9	Bag Valve Musk-Adult	2	
10	Bag Valve Musk - Child	2	
11	Bag Valve Musk - Infant	2	
12	CPR Mask	70	
13	Rigid Splint (Set)	2	
14	Portable Oxygen Cylinder (Modified)	33	
15	Face mask	200	

16	Gown	350
17	Cotton Wool	175
18	Crepe Bandage	385
19	Gauge Dressing	350
20	Bandage Triangular	140
21	Gauge Dressing vaseline	140
22	Dressing Abdominal	140
23	Bag Valve Mask	10
24	Collor Stripe Neck	70
25	Triage Ribbon	35
26	Penlight	42
27	Rescue Stretcher	42
28	Salvon	70
29	Betadine	70
30	Omnigel	70
31	Silver Nitrate gel	70
32	Soframycine	10
33	Accucheck	10
34	Kidney tray	10
35	Surgical Tape	10
36	Scissor	10
37	Jelonet	10
38	Oxymeter	10
<b>(III) DEEP DIVING EQUIPMENT</b>		
1	Inflatable Boat (10- 12 Person)	37
2	Out Boat Motor-30 HP	33
3	Life Jacket	229
4	Diving Suits (Full Sleeve)	58
5	Diving / Hand Gloves (pair)	20
6	Diving / Swimming Shoe (pair)	20
7	Weight Belt (Six load approx. 1 Kg)	42
8	Half Face Mask (Under Water)	42
9	Under Water Breathing Apparatus with cylinder	21
10	Surface Breathing System	14
11	Full Face Mask	9
12	Fin	20
13	Under Water Search Camera	5
14	BA Set	56

15	Foot Pumper	10
16	Life buoy	140
17	Diver safety harness	42
18	Knife	28
19	Single Air Cylinder	21
20	Sinker (20kg)	28
21	Electric extension cord	42
22	Nylon Rope (50mtr)	50
23	Air compressor machine	7
24	Blower	10
<b>(IV) Mountaineering &amp; High Rise Building</b>		
1	Ascender	14
2	Descender	14
3	Mitton gloves	70
4	Pully (single/double)	14
5	Kernamantle rope(dynamic/static)	14
6	Figure eight	14
7	Carabiner	14
8	Giri Giri	14
9	Full Body Harness	14
10	Half Body Harness	14
11	Carrying harness	14
12	Safety Helmet	70
13	Basket stretcher	14
14	Rope Launcher	7

**Note-** Tender Inviting Authority holds the discretionary power to **increase/decrease/cancel** any of the above-mentioned items during any stage of the e- Tendering process.

1. Tender will not be considered unless following documents are submitted along with the tender:-

**a)** Scanned copy of **Earnest Money Deposit** of fixed sum of Rs. 10,00,000/- (Rupees Ten Lakh) only to be **deposited through online either** using Net Banking or NEFT/RTGS, must be uploaded on e-tender portal in terms of Memorandum No. 3975-F(Y) dated 28<sup>th</sup> July, 2016 of Finance Department, Audit Branch, Government of West Bengal.

**b)** Valid Trade License, TAX Clearance Certificates, GST Number, PAN No. and P. Tax Submission documents.

**c)** The Earnest Money of the bidder will be forfeited on account of one or more of the following reasons:

- (i) Applicant withdraws the proposal during the validity period of bid specified in E-Tender document.
- (ii) Applicant does not respond to requests for clarification of its proposal/substandard works.
- (iii) Applicant fails to provide required information during the evaluation process or is found to be non-responsive.
- (iv) In case the successful applicant/bidder (the L-1), , fails to sign the Agreement in time; or furnish Security Deposit within stipulated time.
- (v) In case any provisions of this tender/NIT are found violated.

**d) EMD exemption is allowed in this tender.** If any Bidder is exempted from payment of EMD, copy of relevant Government Order needs to be furnished and **have to be uploaded online.**

2. Selected Manufacturers, Distributors or their Authorized Dealers will be bound to supply articles according to the specification of the equipment as shown above as Section-A in the accepted rates failing which, the firm will be blacklisted with the forfeiture of Earnest Money Deposit or any other penalty as imposed by the competent authority.
3. The Financial Offer of the prospective tender will be considered only if the Technical bid of the tenderer is found qualified by the 'Tender Evaluation Committee' chaired by the **ADG(Head Quarter), WB.** The decision of the 'Tender Evaluation Committee' will be final and absolute in this respect.

4. **Security Deposit**

On being found to be the L-1 bidder in the financial bid, the L-1 Bidder on receipt of such notice from this office shall submit the Security Deposit @ 3% of **total contract amount** in the form of Bank Guarantee from a Bank in acceptable form in favour of "WB Govt. Pooling A/C For Performance Guarantee", A/C no- 000605030134, IFSC code- ICIC0000006, MICR code- 70229002, Branch Address- ICICI Bank, 22 R.N. Mukherjee Road, Kolkata-700001 within 10 (Ten) days from issuing of such notice. Security deposit will also be treated as **Performance Bank Guarantee (PBG)** and shall valid for the period of **36** months of warranty period from the date of complete delivery of goods onsite. The L-1 bidder should produce the Security Deposit Challan/Certificate to the notice issuing authority for being considered for issue of AOC/Supply Order in his/her favour.

If the L-1 bidder does not submit Security Deposit within the stipulated time mentioned above and or remains non-responsive, the EMD submitted by him/her will be forfeited and suitable action as deemed fit including blacklisting of the bidder will be taken by the Tender Inviting Authority. In such cases, goods may also be procured from any other bidder.

Exemption from Security Deposit for Bidders who are registered with S.S.I. Unit / N.S.I.C. Ltd./ MSME Unit for the TENDERED ITEMS will be entertained only on the basis of Government Order/ Relevant Documentation providing such exemption from supplied Government Entities.

5. **Delivery & Warranty:**

a) The L-1 bidder in the financial bid shall provide undertaking in **a Non judicial stamped paper of Rs. 100/- onsite** comprehensive warranty of **36 months**. In case of trouble in equipments, response & repair or replacement of the FBP should be given within 24 hrs of complaint within the warranty period. Sufficient spares should be available in stock of the supplier and certificate for availability of spares for at least 03 years after warranty period.



- b) The warranty period for the equipment will commence from the date of complete delivery of the equipment.
- c) Delivery of the equipments shall not be treated as complete till the period it has been fully delivered by the L-1 bidder at the places indicated in the AOC/Supply Order and the same has been satisfactorily verified / inspected by a Committee /representatives of the Tender Inviting Authority. No payment will be released to the bidder in absence of such inspection/verification report.
- d)** The currency in which payments shall be made to the Supplier under this Contract shall be Indian Rupees. Payments shall be made promptly as far as possible SUBJECT TO AVAILABILITY OF FUNDS FROM THE Government. No advance payment or Interest on contract price shall be made. Standard TDS as applicable will be deducted during payment.
6. The list of Qualified Bidders in each stage will be displayed in the web site.
7. In the event of non-supply of article or if article supplied by the manufacturers and or their authorized dealers is found to be sub-standard, the Tender Inviting Authority may without notice to the manufacturers and or their authorized dealers, purchase the article required from elsewhere. Any loss incurred by reason of the price paid for such article above the schedule price or any other loss or expenses incurred by reason of such default on the part of the manufacturers and or their authorized dealers may be deducted from the bills or any money payable to the manufacturers and or their authorized dealers or from the Earnest Money Deposit of the concerned manufacturers and or their authorized dealers.
8. Refund of EMD: The Earnest Money of all the unsuccessful tenders deposited will be refunded automatically through the website after rejection.
9. Prospective applicants are advised to note carefully the minimum qualification criteria as mentioned in 'Instructions to Bidders' and Terms & Conditions.
10. Conditional / Incomplete tender will not be accepted under any circumstances.
11. Intending tenderers are required to quote the rate online (**BOQ**).
12. The tenderers participating in e-Tender must submit the detailed lab test certification (if specially desired by the Tender Inviting Authority, subsequently) along with their technical bid.
13. Before issuance of the SUPPLY ORDER, the tender inviting authority may verify the credential and other documents of the lowest tenderer if found necessary. After verification if it is found that the documents submitted by the lowest tenderer, is either manufactured or false in that case work order will not be issued in favour of the said Tenderer under any circumstances.

14. The bidder should have their service center in Kolkata/Durgapur/Siliguri with documentary evidence. Name and address with contact details including mobile nos. of service representative should be given.
15. Training will be imparted by Supplied Bidder to Equipment handlers (DMG Personnel) free of cost after material acceptance of the full consignment. Any cost regarding such training will be borne by Supplied Bidder only.

**Section-C**  
**Qualification Criteria**

The "Tender Evaluation Committee" will determine the eligibility of each bidder. The bidders shall have to meet all the minimum criteria mentioned in the "Terms & Conditions".

The eligibility of a bidder will be ascertained on the basis of the document(s) in supports of the minimum criteria as mentioned in "Terms & Conditions" and the declaration executed through prescribed affidavit in non-judicial stamp paper of appropriate value duly notarized. If any document submitted by a bidder is either manufactured or false, in such cases the eligibility of the bidder / tenderer will be rejected at any stage without any prejudice.

**Tentative Date & Time Schedule**

<b>Sl. no.</b>	<b>Items</b>	<b>Scheduled date(s)</b>
1.	Start of downloading Documents /Tender publishing/floating (online).	16.01.2025 (Thursday) after 17:00 hrs.
2.	Date of holding pre-bid meeting with the prospective bidders.	20.01.2025 (Monday) after 12:30 hrs.
3.	Bid submission start date (on line).	21.01.2025 (Tuesday) after 17:00 hrs.
4.	Bid submission closing (on line).	12.02.2025 (Wednesday) after 17:00 hrs.
5.	Date of opening of Technical Bid (On line).	15.02.2025 (Saturday) at 12:00 hrs.
6.	Evaluation of documents by Tender Evaluation Committee (Offline) at Bhabani Bhawan, Alipore, Kolkata-27.	Will be informed later on.
7.	Date of uploading list of Technically Qualified Bidders (On line)	Will be informed later on.
8.	Date of Opening of Commercial Bid (On line)	Will be informed later on.
9.	Date of uploading of list of qualified Bidders in Commercial Bid along with the approved rate on the Website.	Will be informed later on.

**Section-D**  
**Instructions to Bidders**

**General guidance for E-Tendering:**

The following instructions / guidelines for electronic submission of tenders for assisting the manufacturers and or their authorized dealers to participate in e-Tendering:

I. **Registration of Contractor:** Any manufacturers and or their authorized dealers willing to take part in the process of e-Tendering will have to be enrolled & registered with the Government e-procurement system, through logging on to <https://wbtenders.gov.in>.

II. **Digital Signature Certificated (DSC):** Each manufacturer and or their authorized dealers is required to obtain a Class-II or Class-III Digital Signature Certificate (DSC) for submission of tenders for the approval service of the National Informatics Centre (NIC) on payment of requisite amount. Details are available at the web site stated in Clause-I above. DSC is given as a USB e-Token.

III. The manufacturers and or their authorized dealers can search and download the NIT and Tender Document(s) electronically from computer once he logs on to the website mentioned in Clause-I using the Digital Signature Certificate. This is the only mode of collection of Tender Documents.

IV. **Submission of Tenders:** Tenders are to be submitted through online to the web site stated in Clause-I in two folders at a time, one in Technical Proposal & the other in Financial Proposal within the prescribed date & time using the Digital Signature Certificate (DSC). Digitally signed copies of the documents are to be uploaded. The documents will get encrypted (transformed into non readable formats).

V. **Online Payment:-** For online payment of EMD, please go through the guidelines given at [wbtenders.gov.in](https://wbtenders.gov.in) and follow the Govt. Notifications in the matter.

VI. **Technical Proposal:** The Technical Proposal should contain scanned copies of the following two covers (folders):

- a) **Statutory Cover** Containing the following documents –
  - i. NIT
  - ii. Application Form: Must be filled up properly in company's Letter Pad, and the same must be scanned and Digitally signed and uploaded as per Annexure- A, given below:
- b) **Non-Statutory Cover** Containing the following documents –

Sl. No.	Category Name	Sub-Category Description	Detail(s)
A.	Certificate (s)	Certificate(s)	✓ TAX Registration Certificate & Acknowledgement ✓ GST Number ✓ PAN ✓ P.Tax (Challan) ✓ Latest IT Receipt
B.	Company Detail(s)	Company Detail	✓ Proprietorship Firm (Trade License) ✓ Partnership Firm (Partnership Deed, Trade License) ✓ Ltd. Company (Incorporation Certificate, Trade License) ✓ Society (Society Registration Copy,
C.	Balance Sheet	PL & Balance Sheet: 2022-23 PL & Balance Sheet: 2023-24	Details
D.	Credential	Credential - 1	Similar nature of work done & completion certificate worth minimum Rs. _____/- <b>Prescribed format given below :-</b>

### **Credential**

Sl. No.	Name of Organization To whom supplied	Name of items	Qty.	Amount	Supply Order Number & Date	Supply date of complete Items	Reason of delay if any	Remarks
01								

- a. Participating Bidders must have PO credential having DMG Equipment's to Central/State Govt. Organizations worth Rs 4,00,00,000/- (Rupees Four crores) within last Two (02) years from the date of Tender publishing in a Single PO Only. Multiple PO Credential shall be summarily rejected. Govt PO Copy to be mandatorily Uploaded.**
- b. The Bidder or its Associated Firms shall never have been Blacklisted by any State/Central govt. An undertaking in this regard must be submitted along with Bid.**
- c. Solvency Certificate from any Nationalized Bank/ CA with UDIN no.**
- d. GST(3 Pages) /Trade License / PAN / WB Professional Tax(If Applicable)/ UDYAM Aadhar Certificate/ ITR-PL-BS for Last 3 financial Year.**
- e. Turnover Certificate from CA with UDIN No for the last 3 Financial year , FY 21-22, FY 22-23, FY 23-24**

VII. **Financial Proposal:**

- a) **BOQ:** The Financial Proposal should contain Bill of Quantities (BOQ) in one covered Excel format. The manufacturers or their authorized dealers is to quote the rate online in Indian Rupees per Unit **including** all charges such as freight/delivery charges etc. **but excluding GST** at the space marked for quoting rate in the BOQ after downloading the prescribed format from the web site. GST should be quoted separately. **Price bid shall be quoted online in the BOQ only and not on any other document.**
- b) **A single Consolidated rate for all items shall be quoted in BOQ. L1 Bidder will be considered based on lowest Consolidated rate quoted for all items of the Tender. Participating Bidders shall be quoting for all the Items (CSSR + MFR + Deep Diving Equipment + Mountaineering & High Rise Building) mandatorily.**

**Opening & Evaluation of Tender:**

- I. **Opening of Bid Proposal:** A Tender Evaluation Committee comprises of selected officers, who will open bid of the Tender.
- II. Cover (folder) for Statutory Documents will be opened first and if found in order, cover (folder) for Non-Statutory Documents will be opened. If there is any deficiency in the Statutory Documents the tender will summarily be rejected.
- III. Decrypted (transformed into readable formats) documents of the Non-Statutory cover will be downloaded and handed over to the Tender Evaluation Committee.
- IV. Summary list of item –wise technically qualified tenderers will be uploaded online.
- V. Pursuant to scrutiny and decision of the Tender Evaluation Committee the Summary List of eligible tenderers and the serial number of items for which their proposal will be considered & uploaded in the web portal.
- VI. During evaluation the committee may summon the tenderers and seek clarification / information or additional documents or original hard copy of any of the documents already submitted and if these are not produced within the stipulated time frame, their proposals will be liable for rejection.
- VII. Financial Bid of item-wise Technically Qualified Bidders will be opened and the L-1 Bidder (Lowest bid) will be considered for the AOC after observing all formalities.
- VIII. **Rejection of Bid:** The e-Tendering committee chaired by the ADG(Head Quarter), West Bengal reserves the right to reject any / or all the tendered rates without assigning any reason and not to place any orders even after selection and is not liable for any cost that might have incurred by any bidder at the stage of bidding and also reserves the right to divide the contract amongst any number of tenderers, if required so and to place order for more or less than the quantity mentioned in the forecast requirement. The said committee does not bind himself to accept the lowest rate.
- IX. All the Equipments should be supplied at the place as given in the supply order and if not otherwise directed the entire supply must be completed within **45 days** from the date of Issuance of Supply Order. Otherwise deposited Security Deposit will be forfeited.
- X. Bid Validity- 365 days from the date of start of online bid submission.



**Inspector General of Police  
(Organisation)  
West Bengal, Bhabani Bhawan,  
Alipore, Kolkata- 700027.**

(To be given on Company Letter Head)

**Annexure-A**

**TENDER CONDITIONS ACCEPTANCE LETTER**

Date:

To,  
**The Director General & Inspector General of Police,  
West Bengal,  
Bhabani Bhawan,  
31, Belvedere Road, Kolkata-700027**

**Sub:** Acceptance of Terms & Conditions of Tender.

**e-Tender Notice No. WBPD/ DMG (Misc) /NIT-01/2024-25**

Name of Tender / Work: **e-tender for Supply of various items of DMG of West Bengal Police.**

Dear Sir,

1. I/ We have downloaded / obtained the tender document(s) for the above mentioned 'Tender/Work' from the web site(s) namely.....as per your advertisement, given in the above mentioned website(s).
2. I have read the entire tender documents (NIT, Annexure, Specifications, other documents) and I / We hereby unconditionally accept and will abide by all the terms and conditions given in various paragraph of NIT for consideration of my application/tender for supply of the goods.
3. The corrigendum(s)/addendum(s) issued from time to time by your department/ organisations too have also been taken into consideration, while submitting this acceptance letter.
4. In case any provisions of this tender are found violated, your department/ organisation shall be at liberty to reject this tender/bid including the forfeiture of the full said Earnest Money Deposit and or Security Deposit (in case my firm/agency is selected for award of contract) absolutely and or withhold the payment fully or partly and we shall not have any claim/right against department in satisfaction of this condition.
5. All the information submitted for this tender by me on behalf of my firm/agency is correct & in the event of the information submitted by me for participating in this tender is found to be false or fabricated in any manner whatsoever, I may be suspended and/or debarred from the Tender at any stage without being compensated or otherwise.
6. The Tender Inviting Authority shall be at liberty to impose such penalty as it deems fit in case my agency withdraws the bid offered, at any stage of the tender.
7. My Agency will undertake the assignment, in accordance with the Specifications and Work detailed in the NIT document and at the cost submitted by my agency in the financial proposal.

8. My firm does not owe any amount to the Government in the past and there are no Government dues outstanding against us.
9. All my offered FBP fully satisfy the specifications detailed in the NITs.
10. We are not blacklisted by any of the Government Organizations / PSUs / Autonomous bodies.
11. My firm is duly registered under the "Indian Partnership Act"(please strikethrough, if not applicable)

Yours faithfully,

Signature of the Bidder \_\_\_\_\_

Name (in Bold Letters) \_\_\_\_\_

Designation \_\_\_\_\_

Official Seal



Submission of OEM Authorization Certificate (MAF) in a prescribed format (**Annexure-B**) is **mandatory** for this e-Tender & **to be separately uploaded online . MAF required for CSSR- Item no 1,2,3,4,30,31 , Deep Diving – Item no 1,2,9,10,11,14**

**Annexure- B**

**MANUFACTURER'S AUTHORIZATION LETTER (MAF)**

[ if applicable ]

**TENDER NOTICE NO.**

**Date:** \_\_\_\_\_

**The Director General & Inspector General of Police,  
West Bengal,  
Bhabani Bhawan,  
31, Belvedere Road, Kolkata-700027.**

WHEREAS \_\_\_\_\_ who are official producers of \_\_\_\_\_ and \_\_\_\_\_ having production facilities at \_\_\_\_\_ do hereby authorize

\_\_\_\_\_ located at \_\_\_\_\_ (hereinafter, the "Bidder") to submit a proposal of the following Products produced by us, for the Supply Requirements associated with the above Tender

When resold by \_\_\_\_\_ these products are subject to our applicable standard end user warranty terms.

We assure you that in the event of \_\_\_\_\_, not being able to fulfil its obligation as our Service Provider in respect of our standard Warranty Terms we would continue to meet our Warranty Terms through alternate arrangements and also provide spares in accordance with the Tender for the period of 02 ( ) years.

We are not blacklisted by any by any of the Government Organizations / PSUs / Autonomous bodies.

Name: \_\_\_\_\_ In the capacity of \_\_\_\_\_

Signed \_\_\_\_\_

Duly authorized to sign the authorization for and on behalf of \_\_\_\_\_

Dated on \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_

Note: This letter of authority must be on the letterhead of the manufacturer, must be signed by an authorized person of the organization who is competent and having the power of attorney to bind the Producer, and must be included by the Bidder in its bid as specified in the Instructions to Bidders.